

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 21.06.96
Test oil : ISO 4113

Combination No. : 0 402 746 616

Injection pump
Pump designation : PES6P130A720LS7422
EP type number : 0 412 736 809

Governor
Governor design. : RQV300...900PA946-1
Governor no. : 0 421 813 992

Cust. part No. :

Customer-spec. information
Customer : IVECO-AIFO
Motor : 8217 SRI

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 076

Inlet press. bar : 2.5

Overflow quantity
min. L/h : 200
Tolerance L/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 12.00
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

Check
tolerance °NW : ± 0.40

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 12.05
Tolerance mm : ± 0.05

Del. quantity
cm3/1000 strokes : 245.0

Tolerance
cm3/1000 strokes : \pm 1.5

Check tolerance
cm3/1000S. : \pm 5.0

Spreed
Tolerance
cm3/1000 strokes : 6.0

Check tolerance
cm3/1000S. : 10.0

Rated speed rpm : 300

Rack travel in mm : 4.60
Tolerance mm : \pm 0.10

Del. quantity
cm3/1000 strokes : 22.0

Tolerance
cm3/1000 strokes : \pm 3.0

Check tolerance
cm3/1000S. : \pm 7.0

Spreed
Tolerance
cm3/1000 strokes : 10.0

Check tolerance
cm3/1000S. : 14.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.17
Tolerance mm : \pm 0.20

Rated speed rpm : 959
guide sleeve
travel mm : 7.98
Tolerance mm : \pm 0.15

Rated speed rpm : 766
guide sleeve
travel mm : 5.97
Tolerance mm : \pm 0.25

Rated speed rpm : 540
guide sleeve
travel mm : 3.52
Tolerance mm : \pm 0.25

Rated speed rpm : 1220
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1070

Rack travel in mm : 11.05
Tolerance mm : \pm 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
Aneroid pressure
hPa : 1200

Del. quantity
cm3/1000 strokes : 245.0

Tolerance
cm3/1000 strokes : \pm 1.5

Check tolerance
cm3/1000S. : \pm 5.0

Spreed
Tolerance
cm3/1000 strokes : 6.0

Check tolerance
cm3/1000S. : 10.0

CONTROL LEVER

control lever
position degree : 120.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 11.00
Rated speed rpm : 945
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1035
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 79.0

tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 4.60
Tolerance mm : \pm 0.10

Rated speed rpm : 200

CRT mm min. : $>$ 6.10

Rated speed rpm : 365

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 12.05
Tolerance mm : \pm 0.05

Rated speed rpm : 550
rack travel mm : 12.10
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 550
Pressure hPa : 1200
rack travel mm : 12.05
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 550
rack travel mm : 9.70
Tolerance mm : \pm 0.10

Rated speed rpm : 550

Pressure hPa : 420
rack travel mm : 10.30
Tolerance mm : \pm 0.15

Pressure hPa : 450
rack travel mm : 10.85
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 256.0
Tolerance
cm³/1000 strokes : \pm 3.5
Check tolerance
cm³/1000S. : \pm 7.0

Aneroid pressure
hPa : -
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 172.5
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 5.0

BREAKAWAY

Rack travel in mm : 11.00
Rated speed rpm : 945
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 22.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 7.0
Spreed
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000S. : 14.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.06.96

Test oil : ISO 4113

Combination No. : 0 402 746 640

Injection pump

Pump designation : PES6P120A320RS7359

EP type number : 0 412 726 925

Governor

Governor design. : RQV300...1050PA1191

Governor no. : 0 421 814 114

Cust. part No. : CCEP 5147B 66-223

Customer-spec. information

Customer : RENAULT V.I.

Motor : MIDR 06.20.45 C4

Power KW : 188.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5

Tolerance bar : ± 0.1

Test nozzle holde
assembly

: 1 688 901 101

Opening pressure
bar

: 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 4.70

Tolerance mm : ± 0.50

Check

tolerance mm : ± 0.10

Rack travel in mm : 20.25

Tolerance mm : ± 0.75

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.30

Check

tolerance °NW : ± 0.50

Start of delivery mark

*NW after s.o.d. : -0.45

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.60

Tolerance mm : ± 0.05

Del. quantity

cm³/1000 strokes : 193.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spreed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : -6.20
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 33.0
Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 5.0

Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.33
Tolerance mm : \pm 0.25

Rated speed rpm : 1140
guide sleeve
travel mm : 8.49
Tolerance mm : \pm 0.25

Rated speed rpm : 754
guide sleeve
travel mm : 6.10
Tolerance mm : \pm 0.25

Rated speed rpm : 365
guide sleeve
travel mm : 2.40
Tolerance mm : \pm 0.25

Rated speed rpm : 415

guide sleeve
travel mm : 3.28
Tolerance mm : \pm 0.25

Rated speed rpm : 460
guide sleeve
travel mm : 3.86
Tolerance mm : \pm 0.25

Rated speed rpm : 1460
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1230
Rack travel in mm : 11.70
Tolerance mm : \pm 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 193.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 305.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : -1.00
Rated speed rpm : 1155
Tolerance 1/min : \pm 5

rack travel mm : -8.60
Rated speed rpm : 1310
Tolerance 1/min : \pm 15

rack travel mm : -12.10
Tolerance mm : \pm 0.50

Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 268.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : -6.20
Tolerance mm : \pm 0.10

Rated speed rpm : 200
CRT mm max. : $<$ -3.80
Rated speed rpm : 370

TORQUE CONTROL

Rated speed rpm : 700
Rated speed rpm : 1050
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : -1.35
Tolerance mm : \pm 0.20

Rated speed rpm : 500
Pressure hPa : 140
rack travel mm : -0.75
Tolerance mm : \pm 0.15

Pressure hPa : 200
rack travel mm : -0.35
Tolerance mm : \pm 0.05

START CUT-OUT

A07

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 220

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 196.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 151.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : -1.00
Rated speed rpm : 1155
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 300

Del. quantity
cm³/1000 strokes : 33.0
Tolerance
cm³/1000 strokes : +- 2.0
Check tolerance
cm³/1000S. : +- 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 24.06.96
Test oil : ISO 4113

Combination No. : 0 402 946 013

Injection pump
Pump designation : PES6P120A320RS8028
EP type number : 0 412 926 021

Governor
Governor design. : RQV275...1250PA1189K
Governor no. : 0 421 815 974

Cust. part No. : CCEP 5146A 66-220

Customer-spec. information

Customer : RENAULT V.I.
Motor : MIDR 06.02.26Y41
Power kW : 184.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 11.00
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

*NW after s.o.d. : -0.25
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

Beginning of delivery difference

betw. rack trav.
mm : 21.00
and maximum rack
travel : 11.00
Difference ° CS : 2.25

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 14.40
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 277.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : -7.70
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 42.0
Tolerance

cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 6.0

Spreed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275
guide sleeve
travel mm : 1.10
Tolerance mm : ± 0.25

Rated speed rpm : 1332
guide sleeve
travel mm : 10.07
Tolerance mm : ± 0.25

Rated speed rpm : 912
guide sleeve
travel mm : 6.79

Tolerance mm : ± 0.25

Rated speed rpm : 412
guide sleeve
travel mm : 2.53
Tolerance mm : ± 0.25

Rated speed rpm : 462
guide sleeve
travel mm : 3.16
Tolerance mm : ± 0.25

Rated speed rpm : 550
guide sleeve
travel mm : 3.97
Tolerance mm : ± 0.25

Rated speed rpm : 1630
guide sleeve
travel mm : 13.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1420

Rack travel in mm : 13.50
Tolerance mm : ± 1.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
Aneroid pressure
hPa : 1600

Del. quantity
cm³/1000 strokes : 277.0
Tolerance

cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 299.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : -1.00
Rated speed rpm : 1335

Tolerance 1/min : + 15
rack travel mm : -10.40
Rated speed rpm : 1490
Tolerance 1/min : + 5
rack travel mm : -13.90
Tolerance mm : + 0.50
Rated speed rpm : 1600

LOW IDLE

control lever
position degree : 254.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 275
rack travel mm : -7.70
Tolerance mm : + 0.10

Rated speed rpm : 200

CRT mm max. : < -6.90

Rated speed rpm : 380

TORQUE CONTROL

Rated speed rpm : 1250

Rated speed rpm : 800
rack travel mm : -0.85
Tolerance mm : + 0.10

Rated speed rpm : 350
rack travel mm : -4.10
Tolerance mm : + 0.25

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1250
Pressure hPa : 1600
Tolerance mm : + 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1000
rack travel mm : -4.40

Tolerance mm : + 0.20

Rated speed rpm : 1250

Pressure hPa : 240
rack travel mm : -3.60
Tolerance mm : + 0.20

Pressure hPa : 480
rack travel mm : -1.60
Tolerance mm : + 0.05

START CUT-OUT

Rated speed rpm : > 175
Rated speed rpm : < 240

Check
speed 1/min : > 155
Check
speed 1/min : < 260

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1600
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 288.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000s. : + 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 179.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000s. : + 4.0

BREAKAWAY

Rack travel in mm : -1.00
Rated speed rpm : 1335
Tolerance 1/min : + 15

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity
cm³/1000 strokes : 105.0
Tolerance
cm³/1000 strokes : ± 15.0
Check tolerance
cm³/1000s. : ± 19.0

LOW IDLE

Rated speed rpm : 275
Del. quantity
cm³/1000 strokes : 42.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000s. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 24.06.96
Test oil : ISO 4113
Combination No. : 0 403 244 047A
Injection pump
Pump designation : PES4MW100/720RS1525
EP type number : 0 413 204 022
Governor
Governor design. : RQV300...1300MW132
: -13
Governor no. : 0 420 083 330
Cust. part No. : 0260746302

Customer-spec. information
Customer : MB-NFZ
Motor : OM364LA
Power KW : 103.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 4.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.00
Tolerance mm : ± 1.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 13.95
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 119.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 8.0

Rated speed rpm : 300

Rack travel in mm : 3.40

Tolerance mm : \pm 0.10

Del. quantity
cm3/1000 strokes : 12.0

Tolerance
cm3/1000 strokes : \pm 2.0

Check tolerance
cm3/1000S. : \pm 4.5

Speed
Tolerance
cm3/1000 strokes : 2.0

Check tolerance
cm3/1000S. : 4.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300

guide sleeve
travel mm : 0.91

Tolerance mm : \pm 0.20

Rated speed rpm : 1354

guide sleeve
travel mm : 7.15

Tolerance mm : \pm 0.15

Rated speed rpm : 1130

guide sleeve
travel mm : 5.40

Tolerance mm : \pm 0.25

Rated speed rpm : 800

guide sleeve
travel mm : 3.79

Tolerance mm : \pm 0.25

Rated speed rpm : 1679

guide sleeve
travel mm : 12.00

Tolerance mm : \pm 0.25

Rated speed rpm : 1780

guide sleeve
travel mm : 13.50

Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1615

Rack travel in mm : 12.90

Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300

Aneroid pressure
hPa : 1200

Del. quantity
cm3/1000 strokes : 119.0

Tolerance
cm3/1000 strokes : \pm 1.0

Check tolerance
cm3/1000S. : \pm 4.0

Speed
Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 113.0

tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 12.90

Rated speed rpm : 1345

Tolerance 1/min : \pm 5

rack travel mm : 4.00

Rated speed rpm : 1480

Tolerance 1/min : \pm 15

rack travel mm : 0.50

Tolerance mm : \pm 0.50

Rated speed rpm : 1550

LOW IDLE

control lever
position degree : 74.0

tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300

rack travel mm : 3.40

Tolerance mm : \pm 0.10

Rated speed rpm : 200
CRT mm min. : > 4.20

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 13.95
Tolerance mm : \pm 0.05

Rated speed rpm : 600
rack travel mm : 13.95
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 13.95
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 750
rack travel mm : 3.65
Tolerance mm : \pm 0.10

Pressure hPa : 350
rack travel mm : 1.15
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 200

Check
speed 1/min : > 80
Check
speed 1/min : < 220

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 600

Del. quantity
cm³/1000 strokes : 117.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 50.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 12.90
Rated speed rpm : 1345
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 4.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.07.96
Test oil : ISO 4113

Combination No. : 9 400 085 310

Injection pump
Pump designation : PES6A95D410RS2772
EP type number : 9 400 084 018

Governor
Governor design. : RQV300...1300AB1066
: -8L
Governor no. : 9 420 080 279

Cust. part No. :

Customer-spec. information
Customer : MBB
Motor : OM 366 LA
Power KW : 155.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 11.15
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 99.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 300

Rack travel in mm : 7.00

Tolerance mm : \pm 0.10

Del. quantity

cm³/1000 strokes : 11.0

Tolerance

cm³/1000 strokes : \pm 2.0

Check tolerance

cm³/1000S. : \pm 4.5

Spread

Tolerance

cm³/1000 strokes : 5.5

Check tolerance

cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300

guide sleeve

travel mm : 1.05

Tolerance mm : \pm 0.25

Rated speed rpm : 1500

guide sleeve

travel mm : 8.55

Tolerance mm : \pm 0.05

Rated speed rpm : 500

guide sleeve

travel mm : 2.55

Tolerance mm : \pm 0.25

Rated speed rpm : 750

guide sleeve

travel mm : 4.20

Tolerance mm : \pm 0.10

GUIDE SLEEVE POSITION

Rated speed rpm : 1500

Rack travel in mm : 16.50

Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300

Aneroid pressure

hPa : 700

Del. quantity

cm³/1000 strokes : 99.0

Tolerance

cm³/1000 strokes : \pm 1.0

Check tolerance

cm³/1000S. : \pm 3.0

Spread

Tolerance

cm³/1000 strokes : 3.5

Check tolerance

cm³/1000S. : 8.0

CONTROL LEVER

control lever

position degree : 109.0

tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 10.10

Rated speed rpm : 1365

Tolerance 1/min : \pm 5

rack travel mm : 4.00

Rated speed rpm : 1500

Tolerance 1/min : \pm 15

rack travel mm : 0.50

Tolerance mm : \pm 0.50

Rated speed rpm : 1650

LOW IDLE

control lever

position degree : 68.0

tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300

rack travel mm : 7.00

Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : $>$ 8.00

TORQUE CONTROL

Rated speed rpm : 1300

rack travel mm : 11.15

Tolerance mm : \pm 0.05

Rated speed rpm : 700
 rack travel mm : 11.15
 Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
 Pressure hPa : 700
 rack travel mm : 11.15
 Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
 Rated speed rpm : 500

 Rated speed rpm : 500

 Pressure hPa : 300
 rack travel mm : 0.40
 Tolerance mm : \pm 0.10

 Pressure hPa : 450
 rack travel mm : 1.05
 Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : > 100
 Rated speed rpm : < 220

 Check
 speed 1/min : > 80
 Check
 speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
 hPa : 700
 Rated speed rpm : 700
 Del. quantity
 cm³/1000 strokes : 87.5
 Tolerance
 cm³/1000 strokes : \pm 2.0
 Check tolerance
 cm³/1000S. : \pm 4.0
 Spreed
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 8.0

Aneroid pressure
 hPa : -
 Rated speed rpm : 500
 Del. quantity
 cm³/1000 strokes : 60.5
 Tolerance
 cm³/1000 strokes : \pm 1.0
 Check tolerance
 cm³/1000S. : \pm 3.0
 Spreed
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 8.0

BREAKAWAY

Rack travel in mm : 10.10
 Rated speed rpm : 1365
 Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
 rack travel mm : 13.70
 Tolerance mm : \pm 0.10
 Del. quantity
 cm³/1000 strokes : 84.0
 Tolerance
 cm³/1000 strokes : \pm 7.5
 Check tolerance
 cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 300
 Del. quantity
 cm³/1000 strokes : 11.0
 Tolerance
 cm³/1000 strokes : \pm 2.0
 Check tolerance
 cm³/1000S. : \pm 4.5
 Spreed
 Tolerance
 cm³/1000 strokes : 5.5
 Check tolerance
 cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.06.96
Test oil : ISO 4113
Combination No. : 9 400 087 506
Injection pump
Pump designation : PES6P120A320/3RS3365
EP type number : 9 400 087 092
Governor
Governor design. : RSV450...900P1A628
Governor no. : 9 420 082 333

Cust. part No. :

Customer-spec. information
Customer : CUMMINS
Motor : 6CTAAG
Power KW : 240.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

A21

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.40
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery blocking

°NW after s.o.d. : 7.50
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.23

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 11.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 262.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 450

Rack travel in mm : 4.50
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 18.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 5.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900

Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 262.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 59.0
tolerance degree : \pm 4.0

control lever
position degree : 109.0
tolerance degree : \pm 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 942
rack travel mm : 10.80

Rated speed rpm : 982
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1030

Rated speed rpm : 943
rack travel mm : 10.80

Rated speed rpm : 983
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1030

Rated speed rpm : 944
rack travel mm : 10.80

Rated speed rpm : 984
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1030

Rated speed rpm : 945
rack travel mm : 10.80

Rated speed rpm : 985
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : \pm 0.50

Rated speed rpm : 1030

Rated speed rpm : 946
rack travel mm : 10.80

Rated speed rpm : 986
Tolerance 1/min : ± 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1030

Rated speed rpm : 947
rack travel mm : 10.80

Rated speed rpm : 987
Tolerance 1/min : ± 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1030

LOW IDLE

control lever
position degree : 81.0
tolerance degree : ± 4.0

control lever
position degree : 31.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 450
rack travel mm : 4.00

Testing:

Rated speed rpm : 450
rack travel mm : 4.50
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 485
Tolerance 1/min : ± 30

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 11.85

Tolerance mm : ± 0.05

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : ± 1.00
Del. quantity
cm³/1000 strokes : 302.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 14.0

LOW IDLE

Rated speed rpm : 450
Del. quantity
cm³/1000 strokes : 18.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.06.96
Test oil : ISO 4113
Combination No. : 9 400 030 707
Injection pump
Pump designation : PES6A100D320/3RS3511
EP type number : 9 410 037 253
Governor
Governor design. : RQV400...1250AB1320R
Governor no. : F 002 A30 000

Cust. part No. : TATA-CUMMINS

Customer-spec. information
Customer : CUMMINS
Motor : 6BT - 145 BHP

TEST BENCH REQUIREMENTS

Inlet line : 3.2;

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 9 451 037 430

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery blocking

°NW after s.o.d. : 5.00
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.29

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 12.25
Tolerance mm : ± 0.05

Rack travel in mm : 7.70
Tolerance mm : ± 0.10

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 400
guide sleeve
travel mm : 1.71
Tolerance mm : \pm 0.20

Rated speed rpm : 1347
guide sleeve
travel mm : 8.48
Tolerance mm : \pm 0.15

Rated speed rpm : 880
guide sleeve
travel mm : 4.97
Tolerance mm : \pm 0.25

Rated speed rpm : 499
guide sleeve
travel mm : 2.75
Tolerance mm : \pm 0.25

Rated speed rpm : 549
guide sleeve
travel mm : 3.30
Tolerance mm : \pm 0.25

Rated speed rpm : 560
guide sleeve
travel mm : 3.37
Tolerance mm : \pm 0.25

Rated speed rpm : 1620
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1250

Rack travel in mm : 16.00
Tolerance mm : \pm 1.30

CONTROL LEVER

control lever
position degree : 62.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 11.25

A25

Rated speed rpm : 1320
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1450
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1505

LOW IDLE

control lever
position degree : 15.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 400
rack travel mm : 7.70
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 720
Tolerance 1/min : \pm 30

Rated speed rpm : 100
CRT mm min. : $>$ 9.00

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 12.25
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 750
Pressure hPa : 750
rack travel mm : 12.25
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 750
rack travel mm : 11.65
Tolerance mm : \pm 0.20

Rated speed rpm : 750
Pressure hPa : 415
rack travel mm : 12.10
Tolerance mm : \pm 0.10

Pressure hPa : 385
rack travel mm : 11.90
Tolerance mm : \pm 0.20

START CUT-OUT

Rated speed rpm : > 120
Rated speed rpm : < 300

Check
speed 1/min : > 100
Check
speed 1/min : < 340

BREAKAWAY

Rack travel in mm : 11.25
Rated speed rpm : 1320
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 15.00
Tolerance mm : \pm 0.50

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.05.96
Test oil : ISO 4113
Combination No. : 9 400 030 750
Injection pump
Pump designation : PES4A95D320/3RS2880
EP type number : 9 410 037 214
Governor
Governor design. : RSV475...1050AOC865R
Governor no. : F 002 A20 201

Cust. part No. : 3930156

Customer-spec. information

Customer : CUMMINS
Motor : CUMMINS-4BTA-3.9
Power KW : 79.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 9.00
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.29

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 13.30
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 115.0

Tolerance
cm3/1000 strokes : \pm 1.0

Check tolerance
cm3/1000S. : \pm 3.0

Spread
Tolerance
cm3/1000 strokes : 4.0

Check tolerance
cm3/1000S. : 6.5

Rated speed rpm : 475

Rack travel in mm : 6.25
Tolerance mm : \pm 0.10

Del. quantity
cm3/1000 strokes : 22.0

Tolerance
cm3/1000 strokes : \pm 2.0

Check tolerance
cm3/1000S. : \pm 4.5

Spread
Tolerance
cm3/1000 strokes : 6.0

Check tolerance
cm3/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
Aneroid pressure
hPa : 900

Del. quantity
cm3/1000 strokes : 115.0

Tolerance
cm3/1000 strokes : \pm 1.0

Check tolerance
cm3/1000S. : \pm 3.0

Spread

Tolerance
cm3/1000 strokes : 4.0
Check tolerance
cm3/1000S. : 6.5

CONTROL LEVER

control lever
position degree : 98.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 12.30
Rated speed rpm : 1110
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1190
Tolerance 1/min : \pm 15

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1260

rack travel mm : 4.00
Rated speed rpm : 1195

LOW IDLE

control lever
position degree : 78.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 475
rack travel mm : 5.75

Testing:

Rated speed rpm : 475
rack travel mm : 6.25
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 565
Tolerance 1/min : \pm 30

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 13.30
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 14.30
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.90
Tolerance mm : \pm 0.20

Rated speed rpm : 500

Pressure hPa : 600
rack travel mm : 13.30
Tolerance mm : \pm 0.20

Pressure hPa : 400
rack travel mm : 12.10
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 129.2
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 71.8
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

B01

BREAKAWAY

Rack travel in mm : 12.30
Rated speed rpm : 1110
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 121.4
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 15.0

LOW IDLE

Rated speed rpm : 475
Del. quantity
cm³/1000 strokes : 22.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 28.06.96
Test oil : ISO 4113

Combination No. : 0 402 066 709

Injection pump
Pump designation : PES6P120A120RS3358
EP type number : 0 412 026 784

Governor
Governor design. : RSV475...1100POA632
Governor no. : 0 421 833 539

Cust. part No. : 3929602

Customer-spec. information
Customer : CDC
Motor : 6BTA ELITE
Power KW : 130.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 086

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery blocking

°NW after s.o.d. : 6.75
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.20
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 138.5

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Speed
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rated speed rpm : 475

Rack travel in mm : 5.40
Tolerance mm : \pm 0.20

Del. quantity
cm³/1000 strokes : 24.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5

Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 138.5
Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 93.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 10.20
Rated speed rpm : 1145
Tolerance 1/min : \pm 5

rack travel mm : 5.70
Rated speed rpm : 1230
Tolerance 1/min : \pm 5

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 78.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 475
rack travel mm : 4.90

Testing:

Rated speed rpm : 475
rack travel mm : 5.40
Tolerance mm : \pm 0.20

Rated speed rpm : 100

CRT mm min. : < 19.00

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 11.20
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 12.00
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 8.45
Tolerance mm : \pm 0.20

Rated speed rpm : 500

Pressure hPa : 975
rack travel mm : 11.20
Tolerance mm : \pm 0.20

Pressure hPa : 575
rack travel mm : 9.50
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 170.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 86.5
Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 10.20
Rated speed rpm : 1145
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.00
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 165.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 475
Del. quantity
cm³/1000 strokes : 24.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 28.06.96
Test oil : ISO 4113

Combination No. : 0 402 736 872

Injection pump
Pump designation : PES6P120A120RS7353
EP type number : 0 412 726 924

Governor
Governor design. : RQV350...1100PA1177K
Governor no. : 0 421 815 443

Cust. part No. : 3928154

Customer-spec. information
Customer : CDC
Motor : 6CTA-A
Power KW : 186.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 4.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery blocking

*NW after s.o.d. : 5.50
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 13.70
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 216.5

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 6.50
Tolerance mm : \pm 0.20

Del. quantity
cm³/1000 strokes : 25.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 5.0

Speed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 350
guide sleeve
travel mm : 1.84
Tolerance mm : \pm 0.15

Rated speed rpm : 1081
guide sleeve
travel mm : 8.77
Tolerance mm : \pm 0.15

Rated speed rpm : 461
guide sleeve
travel mm : 3.50
Tolerance mm : \pm 0.25

Rated speed rpm : 370
guide sleeve
travel mm : 2.50
Tolerance mm : \pm 0.25

Rated speed rpm : 1510
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 216.5

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 119.0
tolerance degree : \pm 6.0

RATED SPEED

rack travel mm : 12.40
Rated speed rpm : 1165
Tolerance 1/min : \pm 15

rack travel mm : 4.00
Rated speed rpm : 1300
Tolerance 1/min : \pm 5

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 68.5
tolerance degree : \pm 6.0

Testing:

Rated speed rpm : 350
rack travel mm : 6.50
Tolerance mm : \pm 0.20

510
13.50
0.50
FULL LOAD STOP
100
200
216.5
1.0
4.0
5.0
9.0
19.0
6.0
2.40
65
15
4.00
100
5
0.50
0.50
0.00
68.5
6.0
50
6.50
0.20

Rated speed rpm : 275
CRT mm min. : > 8.10
Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 13.70
Tolerance mm : +- 0.05
Rated speed rpm : 650
rack travel mm : 13.30
Tolerance mm : +- 0.20
Rated speed rpm : 1100
rack travel mm : 13.50
Tolerance mm : +- 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1000
Pressure hPa : 1200

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1000
rack travel mm : 9.25
Tolerance mm : +- 0.20
Rated speed rpm : 1000
Pressure hPa : 765
rack travel mm : 13.20
Tolerance mm : +- 0.20
Pressure hPa : 325
rack travel mm : 10.65
Tolerance mm : +- 0.05

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 290
Check speed 1/min : > 80
Check speed 1/min : < 300

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FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 650
Del. quantity
cm3/1000 strokes : 208.0
Tolerance
cm3/1000 strokes : +- 3.0
Check tolerance
cm3/1000S. : +- 6.0
Spreed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0
Aneroid pressure
hPa : -
Rated speed rpm : 1000
Del. quantity
cm3/1000 strokes : 96.5
Tolerance
cm3/1000 strokes : +- 1.0
Check tolerance
cm3/1000S. : +- 3.0

BREAKAWAY

Rack travel in mm : 12.40
Rated speed rpm : 1165
Tolerance 1/min : +- 15

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 12.50
Tolerance mm : +- 0.50
Del. quantity
cm3/1000 strokes : 190.0
Tolerance
cm3/1000 strokes : +- 20.0
Check tolerance
cm3/1000S. : +- 25.0

LOW IDLE

Rated speed rpm : 350
Del. quantity
cm3/1000 strokes : 25.0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See diagram (a) H/00/

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000s. : ± 5.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.07.96
Test oil : ISO 4113

Combination No. : 0 402 746 611

Injection pump
Pump designation : PES6P120A320RS7372
EP type number : 0 412 726 940

Governor
Governor design. : RQV250...1400PA1279K
Governor no. : 0 421 815 508

Cust. part No. : 3866783

Customer-spec. information

Customer : CDC
Motor : 6BTA
Power KW : 235.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 4.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 11.00
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 13.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 195.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 300

Rack travel in mm : 7.10
Tolerance mm : ± 0.20

Del. quantity
cm³/1000 strokes : 29.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 5.0

Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275
guide sleeve
travel mm : 1.39
Tolerance mm : ± 0.20

Rated speed rpm : 1455
guide sleeve
travel mm : 9.16
Tolerance mm : ± 0.15

Rated speed rpm : 931
guide sleeve
travel mm : 5.67
Tolerance mm : ± 0.25

Rated speed rpm : 480
guide sleeve
travel mm : 3.18
Tolerance mm : ± 0.25

Rated speed rpm : 1860
guide sleeve
travel mm : 13.50
Tolerance mm : ± 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 195.5
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 118.5
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 12.80
Rated speed rpm : 1465
Tolerance 1/min : ± 5

rack travel mm : 6.80
Rated speed rpm : 1580
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1725

LOW IDLE

control lever
position degree : 74.5
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 7.10
Tolerance mm : ± 0.20

Rated speed rpm : 200
CRT mm min. : > 8.60
Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 1400
rack travel mm : 13.85
Tolerance mm : \pm 0.05

Rated speed rpm : 1000
rack travel mm : 13.60
Tolerance mm : \pm 0.10

Rated speed rpm : 700
rack travel mm : 13.15
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1400
Pressure hPa : 1200

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1000
rack travel mm : 10.30
Tolerance mm : \pm 0.20

Rated speed rpm : 1400

Pressure hPa : 620
rack travel mm : 12.90
Tolerance mm : \pm 0.20

Pressure hPa : 280
rack travel mm : 11.30
Tolerance mm : \pm 0.20

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 200

Check
speed 1/min : > 80
Check
speed 1/min : < 210

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 185.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 110.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 12.80
Rated speed rpm : 1465
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.00
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 175.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 29.0

Tolerance
cm3/1000 strokes : +- 3.0
Check tolerance
cm3/1000S. : +- 5.0
Speed
Tolerance
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.07.96
Test oil : ISO 4113

Combination No. : 0 403 466 150

Injection pump
Pump designation : PES6MW100/120RS1238
EP type number : 0 413 406 237

Governor
Governor design. : RSV500...1100MW2A366
Governor no. : 0 420 085 249

Cust. part No. : 3929165

Customer-spec. information
Customer : CDC
Motor : 6 CT
Power KW : 138.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

*NW after s.o.d. : 8.00
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

Beginning of delivery differende

and maximum rack
travel : 15.00
Difference ° CS : 2.00

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 10.80
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 130.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spreed
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rated speed rpm : 500

Rack travel in mm : 5.50
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 26.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5

Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 3.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100

Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 130.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 97.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 9.80
Rated speed rpm : 1160
Tolerance 1/min : \pm 5

rack travel mm : 6.20
Rated speed rpm : 1205
Tolerance 1/min : \pm 5

rack travel mm : 1.00
Tolerance mm : \pm 0.70
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 84.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 500
rack travel mm : 5.00

Testing:

Rated speed rpm : 500
rack travel mm : 5.50
Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 10.80
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 11.35
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
rack travel mm : 11.15
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.50
Tolerance mm : \pm 0.20

Rated speed rpm : 500

Pressure hPa : 550
rack travel mm : 10.90
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 140.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 121.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 9.80
Rated speed rpm : 1160
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 177.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 13.0

LOW IDLE

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 26.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.06.96
Test oil : ISO 4113

Combination No. : 9 400 030 737

Injection pump
Pump designation : PES6A95D320/3RS2881
EP type number : 9 410 037 215

Governor
Governor design. : RSV475...1100A0C850R
Governor no. : 9 420 034 716

Cust. part No. : 3929409

Customer-spec. information
Customer : CDC
Motor : 6BT
Power KW : 90.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 7.00
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 10.25
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 81.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

Rated speed rpm : 475

Rack travel in mm : 5.10
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 18.5
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5

Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 5.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 900
Del. quantity
cm³/1000 strokes : 81.5
Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0
Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 6.5

CONTROL LEVER

control lever
position degree : 97.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 9.20
Rated speed rpm : 1165
Tolerance 1/min : ± 5

rack travel mm : 4.50
Rated speed rpm : 1215
Tolerance 1/min : ± 5

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 85.5
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 475
rack travel mm : 4.60

Testing:

Rated speed rpm : 475
rack travel mm : 5.10
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 10.25
Tolerance mm : ± 0.05

Rated speed rpm : 800
rack travel mm : 10.90
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 800
Pressure hPa : 900

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 800
rack travel mm : 8.70
Tolerance mm : \pm 0.20

Rated speed rpm : 800

Pressure hPa : 450
rack travel mm : 10.50
Tolerance mm : \pm 0.20

Pressure hPa : 275
rack travel mm : 9.50
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 93.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 65.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 9.20
Rated speed rpm : 1165
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 120.5
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 15.0

LOW IDLE

Rated speed rpm : 475
Del. quantity
cm³/1000 strokes : 18.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.06.96
Test oil : ISO 4113

Combination No. : 9 400 030 738

Injection pump
Pump designation : PES6A95D320/3RS2881
EP type number : 9 410 037 215

Governor
Governor design. : RSV475...1100A0C851R
Governor no. : 9 420 034 717

Cust. part No. : 3929408

Customer-spec. information

Customer : CDC
Motor : 6BT
Power KW : 98.0

TEST BENCH REQUIREMENTS

Inlet Line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 7.00
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.05
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 92.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

Rated speed rpm : 475

Rack travel in mm : 5.10
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 18.5
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5

Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 5.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 900
Del. quantity
cm³/1000 strokes : 92.5
Tolerance
cm³/1000 strokes : ± 1.0

B20

Check tolerance
cm³/1000S. : ± 3.0
Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 6.5

CONTROL LEVER

control lever
position degree : 96.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 10.00
Rated speed rpm : 1165
Tolerance 1/min : ± 5

rack travel mm : 4.50
Rated speed rpm : 1215
Tolerance 1/min : ± 5

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 85.5
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 475
rack travel mm : 4.60

Testing:

Rated speed rpm : 475
rack travel mm : 5.10
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 11.05
Tolerance mm : ± 0.05

Rated speed rpm : 800
rack travel mm : 11.80
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 800
Pressure hPa : 900

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 800
rack travel mm : 8.70
Tolerance mm : \pm 0.20

Rated speed rpm : 800

Pressure hPa : 650
rack travel mm : 11.20
Tolerance mm : \pm 0.20

Pressure hPa : 350
rack travel mm : 9.50
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 104.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 65.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 10.00
Rated speed rpm : 1165
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 120.5
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 15.0

LOW IDLE

Rated speed rpm : 475
Del. quantity
cm³/1000 strokes : 18.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 28.06.96
Test oil : ISO 4113
Combination No. : 0 401 876 784
Injection pump
Pump designation : PE6P120A320RS3189
EP type number : 0 411 826 759
Governor
Governor design. : RSV650...750P4A421
: -14
Governor no. : 0 421 833 467
Cust. part No. : 864537 P09 v.05/96

Customer-spec. information
Customer : PENTA
Motor : TWD 710 G

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 2 417 413 077
Inlet press. bar : 1.5
Tolerance bar : ± 0.1
Test nozzle holder
assembly : 1 688 901 019
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 075
Outside diameter : 8.0

B22

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 15.0
Tolerance bar : ± 1.0
Prestroke mm : 2.65
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 0.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75
Start of delivery mark
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700
Rack travel in mm : 9.30
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 190.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000s. : ± 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 650

Rack travel in mm : 3.40
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 22.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 5.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 190.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 43.0
tolerance degree : ± 4.0

control lever
position degree : 93.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 8.30
Rated speed rpm : 752

Tolerance 1/min : ± 3

rack travel mm : 4.00
Rated speed rpm : 778

Tolerance 1/min : ± 7

rack travel mm : 0.85
Tolerance mm : ± 0.55

Rated speed rpm : 900

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 750
rack travel mm : 8.30

Rated speed rpm : 776
Tolerance 1/min : ± 4

rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : ± 0.55

Rated speed rpm : 900

Rated speed rpm : 751
rack travel mm : 8.30

Rated speed rpm : 777
Tolerance 1/min : ± 4

rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : ± 0.55

Rated speed rpm : 900

Rated speed rpm : 752
rack travel mm : 8.30

Rated speed rpm : 778
Tolerance 1/min : ± 4

rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : ± 0.55

Rated speed rpm : 900

Rated speed rpm : 753
rack travel mm : 8.30

Rated speed rpm : 779
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 900

Rated speed rpm : 754
rack travel mm : 8.30

Rated speed rpm : 780
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 900

Rated speed rpm : 755
rack travel mm : 8.30

Rated speed rpm : 781
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 900

LOW IDLE

control lever
position degree : 87.0
tolerance degree : \pm 4.0

control lever
position degree : 37.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 650
rack travel mm : 3.40
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 660
Tolerance 1/min : \pm 30

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 9.30
Tolerance mm : \pm 0.05

BREAKAWAY

Rack travel in mm : 8.30
Rated speed rpm : 752
Tolerance 1/min : \pm 3

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50

LOW IDLE

Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 22.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 28.06.96
Test oil : ISO 4113

Combination No. : 0 401 876 809

Injection pump
Pump designation : PE6P120A320RS3355
EP type number : 0 411 826 814

Governor
Governor design. : RSV325...1200P1A605
Governor no. : 0 421 833 487

Cust. part No. : 3825834 P05 v.05/96

Customer-spec. information
Customer : PENTA
Motor : TWD731ME
Power KW : 175.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 7.80
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 10.60
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 126.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : +- 4.0

Spread
Tolerance
cm³/1000 strokes : 7.0

Check tolerance
cm³/1000S. : 11.0

Rated speed rpm : 325

Rack travel in mm : 4.40
Tolerance mm : +- 0.10

Del. quantity
cm³/1000 strokes : 24.0

Tolerance
cm³/1000 strokes : +- 2.5

Check tolerance
cm³/1000S. : +- 5.0

Spread
Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 6.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.85
Tolerance mm : +- 0.55

governor spring
pre-tension
click setting x : 6.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200

Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 126.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 4.0

Spread
Tolerance
cm³/1000 strokes : 7.0

Check tolerance
cm³/1000S. : 11.0

CONTROL LEVER

control lever
position degree : 71.0
tolerance degree : +- 4.0

control lever
position degree : 121.0
tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 9.60
Rated speed rpm : 1230
Tolerance 1/min : +- 5

rack travel mm : 4.00
Rated speed rpm : 1284
Tolerance 1/min : +- 15

rack travel mm : 0.85
Tolerance mm : +- 0.55
Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 81.0
tolerance degree : +- 4.0

control lever
position degree : 31.0
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 3.90

Testing:

Rated speed rpm : 325
rack travel mm : 4.40
Tolerance mm : +- 0.10

rack travel mm : 2.00
Rated speed rpm : 390
Tolerance 1/min : +- 30

TORQUE CONTROL

Rated speed rpm : 1200
rack travel mm : 10.60
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 10.60
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 10.60
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 7.80
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 650
rack travel mm : 2.50
Tolerance mm : \pm 0.15

Pressure hPa : 260
rack travel mm : 0.25
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 147.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 7.0
Check tolerance
cm³/1000S. : 11.0

Aneroid pressure
hPa : -
Rated speed rpm : 500

Del. quantity
cm³/1000 strokes : 87.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 9.60
Rated speed rpm : 1230
Tolerance 1/min : \pm 5

LOW IDLE

Rated speed rpm : 325
Del. quantity
cm³/1000 strokes : 24.0
Tolerance
cm³/1000 strokes : \pm 2.5
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 6.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.06.96
Test oil : ISO 4113
Combination No. : 0 402 046 862
Injection pump
Pump designation : PES6P120A320RS3337
EP type number : 0 412 026 770
Governor
Governor design. : RQV300...1250PA1149K
Governor no. : 0 421 815 416

Cust. part No. : CCEP 5141A 66-218

Customer-spec. information
Customer : RENAULT V.I.
Motor : MIDR 06-02-26 V4
Power KW : 133.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 084

Inlet press. bar : 2.5

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.10
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
check
tolerance °NW : ± 0.50

Start of delivery mark

°NW after s.o.d. : -0.18
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

Beginning of delivery difference

betw. rack trav.
mm : 21.00
and maximum rack
travel : 10.50
Difference ° CS : 2.00

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 11.10
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 150.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : -6.30
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 32.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 5.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.31
Tolerance mm : \pm 0.20

Rated speed rpm : 1346
guide sleeve
travel mm : 10.55
Tolerance mm : \pm 0.15

Rated speed rpm : 905
guide sleeve
travel mm : 6.54
Tolerance mm : \pm 0.25

Rated speed rpm : 381
guide sleeve
travel mm : 2.38
Tolerance mm : \pm 0.25

Rated speed rpm : 431
guide sleeve
travel mm : 2.98
Tolerance mm : \pm 0.25

Rated speed rpm : 530
guide sleeve
travel mm : 3.77
Tolerance mm : \pm 0.25

Rated speed rpm : 1580
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1380
Rack travel in mm : 10.50
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 297.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : -1.00
Rated speed rpm : 1315
Tolerance 1/min : \pm 15

rack travel mm : -7.10
Rated speed rpm : 1395
Tolerance 1/min : \pm 5

rack travel mm : -10.60
Tolerance mm : \pm 0.50
Rated speed rpm : 1550

LOW IDLE

control lever
position degree : 244.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : -6.30
Tolerance mm : \pm 0.10

Rated speed rpm : 200

CRT mm min. : $<$ -5.20

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 1250

Rated speed rpm : 850
rack travel mm : -1.35
Tolerance mm : \pm 0.15

Rated speed rpm : 350
rack travel mm : -1.80
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1250
Pressure hPa : 1000

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1250
rack travel mm : -2.00
Tolerance mm : \pm 0.20

Rated speed rpm : 1250

Pressure hPa : 160
rack travel mm : -1.40
Tolerance mm : \pm 0.10

Pressure hPa : 280
rack travel mm : -0.35
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 175
Rated speed rpm : $<$ 240

Check
speed 1/min : $>$ 155
Check
speed 1/min : $<$ 260

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 850
Del. quantity
cm³/1000 strokes : 122.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 106.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : -1.00
Rated speed rpm : 1315
Tolerance 1/min : \pm 15

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 108.0

Tolerance
cm³/1000 strokes : +- 15.0
Check tolerance
cm³/1000S. : +- 19.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 32.0
Tolerance
cm³/1000 strokes : +- 2.0
Check tolerance
cm³/1000S. : +- 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 24.05.96
Test oil : ISO 4113

Combination No. : 0 402 076 801

Injection pump
Pump designation : PES6P120A1320/5RS337
: 2Y
EP type number : 0 412 026 793

Governor
Governor design. : RSV350...1050P1A641
Governor no. : 0 421 833 553

Cust. part No. : 1382923

Customer-spec. information
Customer : SCANIA
Motor : DSI1172A,-C1157A

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration
damper
(RoBo diaphragm) : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

C04

Test lines : 1 680 750 008

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 16.75
Tolerance mm : ± 0.05

Del. quantity cm ³ /1000 strokes	: 263.0
Tolerance cm ³ /1000 strokes	: +- 1.0
Check tolerance cm ³ /1000S.	: +- 4.0
Spreed Tolerance cm ³ /1000 strokes	: 8.0
Check tolerance cm ³ /1000S.	: 12.0
Rack travel in mm	: 6.00
Tolerance mm	: +- 0.20
Del. quantity cm ³ /1000 strokes	: 20.0
Tolerance cm ³ /1000 strokes	: +- 4.0
Check tolerance cm ³ /1000S.	: +- 6.0
Spreed Tolerance cm ³ /1000 strokes	: 5.0
Check tolerance cm ³ /1000S.	: 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm	: 800
Rack travel in mm	: 0.50
Tolerance mm	: +- 0.20
governor spring pre-tension click setting x	: 6.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 700
Aneroid pressure hPa	: 1500
Del. quantity cm ³ /1000 strokes	: 263.0
Tolerance cm ³ /1000 strokes	: +- 1.0

Check tolerance cm ³ /1000S.	: +- 4.0
Spreed Tolerance cm ³ /1000 strokes	: 8.0
Check tolerance cm ³ /1000S.	: 12.0

CONTROL LEVER

control lever position degree	: 33.0
tolerance degree	: +- 4.0
control lever position degree	: 83.0
tolerance degree	: +- 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm	: 750
rack travel mm	: 15.70
Rated speed rpm	: 788
Tolerance 1/min	: +- 4
rack travel mm	: 4.00
rack travel mm	: 0.85
Tolerance mm	: +- 0.55
Rated speed rpm	: 850
Rated speed rpm	: 751
rack travel mm	: 15.70
Rated speed rpm	: 789
Tolerance 1/min	: +- 4
rack travel mm	: 4.00
rack travel mm	: 0.85
Tolerance mm	: +- 0.55
Rated speed rpm	: 850
Rated speed rpm	: 752
rack travel mm	: 15.70
Rated speed rpm	: 790
Tolerance 1/min	: +- 4
rack travel mm	: 4.00
rack travel mm	: 0.85
Tolerance mm	: +- 0.55
Rated speed rpm	: 850
Rated speed rpm	: 753
rack travel mm	: 15.70
Rated speed rpm	: 791

Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 754
rack travel mm : 15.70

Rated speed rpm : 792
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

Rated speed rpm : 755
rack travel mm : 15.70

Rated speed rpm : 793
Tolerance 1/min : \pm 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 850

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 16.75
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 16.75
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 13.50
Tolerance mm : \pm 0.20

Rated speed rpm : 500

Pressure hPa : -
rack travel mm : 14.30

Tolerance mm : \pm 0.20

Pressure hPa : 640
rack travel mm : 16.00
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 13.50
Tolerance mm : \pm 0.20
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 24.05.96
Test oil : ISO 4113
Combination No. : 0 402 076 802
Injection pump
Pump designation : PES6P120A1320/5RS337
: 3
EP type number : 0 412 026 794
Governor
Governor design. : RSV350...1050P8A643
Governor no. : 0 421 833 555

Cust. part No. : 1385930

Customer-spec. information
Customer : SCANIA
Motor : DSI1171A,-C1156A

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration
damper
(RoBo diaphragm) : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 15.35
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 226.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 350

Rack travel in mm : 5.00
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 18.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Speed
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 6.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1500

C08

Del. quantity
cm³/1000 strokes : 226.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 54.0
tolerance degree : \pm 4.0

control lever
position degree : 104.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 14.30
Rated speed rpm : 1095
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1205
Tolerance 1/min : \pm 15

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 73.0
tolerance degree : \pm 4.0

control lever
position degree : 23.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 4.50

Testing:

Rated speed rpm : 350
rack travel mm : 5.00

Tolerance mm : +- 0.10
rack travel mm : 2.00
Rated speed rpm : 535
Tolerance 1/min : +- 30

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 15.35
Tolerance mm : +- 0.05

Rated speed rpm : 1050
rack travel mm : 15.35
Tolerance mm : +- 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 15.35
Tolerance mm : +- 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 12.00
Tolerance mm : +- 0.20

Rated speed rpm : 500

Pressure hPa : 510
rack travel mm : 13.10
Tolerance mm : +- 0.20

Pressure hPa : 780
rack travel mm : 14.50
Tolerance mm : +- 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1050
Del. quantity
cm3/1000 strokes : 209.0
Tolerance
cm3/1000 strokes : +- 4.0
Check tolerance
cm3/1000S. : +- 6.0

C09

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 150.0
Tolerance
cm3/1000 strokes : +- 1.0
Check tolerance
cm3/1000S. : +- 4.0

BREAKAWAY

Rack travel in mm : 14.30
Rated speed rpm : 1095
Tolerance 1/min : +- 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 12.00
Tolerance mm : +- 0.20
Del. quantity
cm3/1000 strokes : 100.0
Tolerance
cm3/1000 strokes : +- 20.0
Check tolerance
cm3/1000S. : +- 24.0

LOW IDLE

Rated speed rpm : 350
Del. quantity
cm3/1000 strokes : 18.0
Tolerance
cm3/1000 strokes : +- 3.0
Check tolerance
cm3/1000S. : +- 6.0
Spreed
Tolerance
cm3/1000 strokes : 4.0
Check tolerance
cm3/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.07.96
Test oil : ISO 4113

Combination No. : 0 402 646 658

Injection pump
Pump designation : PE6P130A720RS7371
EP type number : 0 412 636 837

Governor
Governor design. : RQV250...900PA1215
Governor no. : 0 421 814 139

Cust. part No. : 3825482-P04 V.11/95

Customer-spec. information
Customer : PENTA
Motor : TAMD 163 A
Power KW : 405.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration
damper
(RoBo diaphragm) : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 60
Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.70
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 7.60
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 13.20
Tolerance mm : ± 0.05

Del. quantity cm ³ /1000 strokes	: 377.0
Tolerance cm ³ /1000 strokes	: ± 1.5
Check tolerance cm ³ /1000S.	: ± 5.0
Spreed Tolerance cm ³ /1000 strokes	: 9.0
Check tolerance cm ³ /1000S.	: 12.0
Rated speed rpm	: 250

Rack travel in mm	: 5.00
Tolerance mm	: ± 0.30
Del. quantity cm ³ /1000 strokes	: 25.0
Tolerance cm ³ /1000 strokes	: ± 3.0
Check tolerance cm ³ /1000S.	: ± 6.0
Spreed Tolerance cm ³ /1000 strokes	: 5.0
Check tolerance cm ³ /1000S.	: 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 250
guide sleeve travel mm	: 1.12
Tolerance mm	: ± 0.25

Rated speed rpm	: 959
guide sleeve travel mm	: 8.22
Tolerance mm	: ± 0.25

Rated speed rpm	: 315
guide sleeve travel mm	: 1.98
Tolerance mm	: ± 0.25

Rated speed rpm	: 365
guide sleeve travel mm	: 2.47
Tolerance mm	: ± 0.25

Rated speed rpm	: 650
guide sleeve travel mm	: 4.40
Tolerance mm	: ± 0.25

Rated speed rpm	: 1160
guide sleeve travel mm	: 11.50
Tolerance mm	: ± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm	: 1030
Rack travel in mm	: 11.00
Tolerance mm	: ± 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 900
Aneroid pressure hPa	: 1500
Del. quantity cm ³ /1000 strokes	: 377.0
Tolerance cm ³ /1000 strokes	: ± 1.5
Check tolerance cm ³ /1000S.	: ± 5.0
Spreed Tolerance cm ³ /1000 strokes	: 9.0
Check tolerance cm ³ /1000S.	: 12.0

CONTROL LEVER

control lever position degree	: 63.0
tolerance degree	: ± 4.0

control lever position degree	: 118.0
tolerance degree	: ± 4.0

RATED SPEED

rack travel mm	: 12.20
Rated speed rpm	: 930
Tolerance 1/min	: ± 5

rack travel mm	: 4.00
Rated speed rpm	: 1010
Tolerance 1/min	: ± 15

rack travel mm	: 0.50
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Tolerance mm : \pm 0.50
Rated speed rpm : 1100

LOW IDLE

control lever
position degree : 71.0
tolerance degree : \pm 4.0

control lever
position degree : 15.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 250
rack travel mm : 5.00
Tolerance mm : \pm 0.30

Rated speed rpm : 150

CRT mm min. : $>$ 6.50

Rated speed rpm : 350

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 13.20
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 13.20
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 13.20
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 7.60
Tolerance mm : \pm 0.20

Rated speed rpm : 500

Pressure hPa : 1000
rack travel mm : 5.10
Tolerance mm : \pm 0.20

Pressure hPa : 240
rack travel mm : 0.25
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 409.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 194.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 5.0

BREAKAWAY

Rack travel in mm : 12.20
Rated speed rpm : 930
Tolerance 1/min : \pm 5

LOW IDLE

Rated speed rpm : 250
Del. quantity
cm³/1000 strokes : 25.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 28.06.96

Test oil : ISO 4113

Combination No. : 0 402 646 673

Injection pump

Pump designation : PE6P120A320RS7412

EP type number : 0 412 626 953

Governor

Governor design. : RQV275...1000PA1300K

Governor no. : 0 421 815 527

Cust. part No. : 1315099

Customer-spec. information

Customer : DAF

Motor : XF 250 M

Power KW : 250.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5

Tolerance bar : ± 0.1

Overflow quantity

min. l/h : 150

Tolerance l/h : ± 20.0

Test nozzle holde
assembly

: 1 688 901 105

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 4.45

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.30

Check

tolerance °NW : ± 0.50

Start of delivery mark

Tolerance : ± 0.10

Check

tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 980

Rack travel in mm : 11.00

Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 247.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spreed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 4.40
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275
guide sleeve
travel mm : 2.04
Tolerance mm : \pm 0.20

Rated speed rpm : 1072
guide sleeve
travel mm : 10.16
Tolerance mm : \pm 0.15

Rated speed rpm : 701
guide sleeve
travel mm : 6.52
Tolerance mm : \pm 0.25

Rated speed rpm : 400
guide sleeve
travel mm : 3.92
Tolerance mm : \pm 0.25

Rated speed rpm : 1310
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1181

Rack travel in mm : 10.00
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 980
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 247.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 118.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 10.00
Rated speed rpm : 1060
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1140
Tolerance 1/min : \pm 15

rack travel mm : 0.70
Tolerance mm : \pm 0.70
Rated speed rpm : 1275

LOW IDLE

control lever
position degree : 70.0

tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 275
rack travel mm : 4.40
Tolerance mm : \pm 0.10

Rated speed rpm : 175

CRT mm min. : $>$ 7.40

Rated speed rpm : 310

TORQUE CONTROL

Rated speed rpm : 980
rack travel mm : 11.00
Tolerance mm : \pm 0.05

Rated speed rpm : 900
rack travel mm : 11.15
Tolerance mm : \pm 0.10

Rated speed rpm : 750
rack travel mm : 11.30
Tolerance mm : \pm 0.10

Rated speed rpm : 700
rack travel mm : 11.00
Tolerance mm : \pm 0.10

Rated speed rpm : 600
rack travel mm : 10.50
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 10.15
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
rack travel mm : 11.00
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 775
Pressure hPa : 1500
rack travel mm : 11.30
Tolerance mm : \pm 0.10

MEASUREMENT

Pressure hPa : -

Rated speed rpm : 775
rack travel mm : 8.00
Tolerance mm : \pm 0.10

Rated speed rpm : 775

Pressure hPa : 460
rack travel mm : 10.30
Tolerance mm : \pm 0.05

Pressure hPa : 250
rack travel mm : 8.60
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 282.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 186.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 4.0

BREAKAWAY

Rack travel in mm : 10.00
Rated speed rpm : 1060
Tolerance 1/min : \pm 5

LOW IDLE

Rated speed rpm : 275

Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.06.96
Test oil : ISO 4113
Combination No. : 0 402 646 881
Injection pump
Pump designation : PE6P120A720RS7126
: -10
EP type number : 0 412 626 929
Governor
Governor design. : RQV300...900PA795-4
Governor no. : 0 421 813 888

Cust. part No. : 1120971

Customer-spec. information
Customer : SCANIA
Motor : DSC1118

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 14.15
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 235.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 4.50
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 17.0

Tolerance
cm³/1000 strokes : + 2.0

Speed
Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 6.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.50
Tolerance mm : + 0.20

Rated speed rpm : 945
guide sleeve
travel mm : 8.00
Tolerance mm : + 0.10

Rated speed rpm : 350
guide sleeve
travel mm : 2.20
Tolerance mm : + 0.30

Rated speed rpm : 650
guide sleeve
travel mm : 5.00
Tolerance mm : + 0.30

GUIDE SLEEVE POSITION

Rated speed rpm : 970

Rack travel in mm : 12.80
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 235.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 50.0
tolerance degree : + 4.0

control lever
position degree : 97.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 13.10
Rated speed rpm : 945
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1045
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1150

LOW IDLE

control lever
position degree : 65.0
tolerance degree : + 4.0

control lever
position degree : 17.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 4.50
Tolerance mm : + 0.10

rack travel mm : 2.00

Rated speed rpm : 360
Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 10.00

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 14.15
Tolerance mm : + 0.05

Rated speed rpm : 900
rack travel mm : 14.15
Tolerance mm : + 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 900
Del. quantity
cm³/1000 strokes : 224.0
Tolerance
cm³/1000 strokes : + 4.0
Check tolerance
cm³/1000S. : + 6.0

BREAKAWAY

Rack travel in mm : 13.10
Rated speed rpm : 945
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 300.0
Tolerance
cm³/1000 strokes : + 25.0

LOW IDLE

Rated speed rpm : 300

Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : + 2.0
Speed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 6.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.06.96
Test oil : ISO 4113

Combination No. : 0 402 648 789

Injection pump
Pump designation : PE8P120A320LS7873
EP type number : 0 412 628 880

Governor
Governor design. : RQV300...1050PA1259
Governor no. : 0 421 814 169

Cust. part No. : 04222488KY0165-17

Customer-spec. information
Customer : KHD
Motor : BF8M1015/C
Power kW : 400.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 115
Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 8- 7- 2- 6
 : - 5- 4- 3

Phasing : 0-45-90-135-180
 : -225-270-315
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 14.00
Tolerance mm : ± 0.05

Del. quantity	
cm ³ /1000 strokes	: 340.0
<hr/>	
Tolerance	
cm ³ /1000 strokes	: ± 1.0
<hr/>	
Check tolerance	
cm ³ /1000S.	: ± 4.0
<hr/>	
Speed	
Tolerance	
cm ³ /1000 strokes	: 6.0
<hr/>	
Check tolerance	
cm ³ /1000S.	: 9.0
<hr/>	
Rated speed rpm	: 300
<hr/>	
Rack travel in mm	: 4.80
Tolerance mm	: ± 0.10
Del. quantity	
cm ³ /1000 strokes	: 23.0
Tolerance	
cm ³ /1000 strokes	: ± 3.0
Check tolerance	
cm ³ /1000S.	: ± 6.0
Speed	
Tolerance	
cm ³ /1000 strokes	: 8.0
Check tolerance	
cm ³ /1000S.	: 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 300
guide sleeve	
travel mm	: 1.24
Tolerance mm	: ± 0.20
<hr/>	
Rated speed rpm	: 1103
guide sleeve	
travel mm	: 10.19
Tolerance mm	: ± 0.15
<hr/>	
Rated speed rpm	: 860
guide sleeve	
travel mm	: 5.59
Tolerance mm	: ± 0.25
<hr/>	
Rated speed rpm	: 560
guide sleeve	
travel mm	: 3.24
Tolerance mm	: ± 0.25

Rated speed rpm	: 1154
guide sleeve	
travel mm	: 12.00
Tolerance mm	: ± 0.25
<hr/>	
Rated speed rpm	: 1230
guide sleeve	
travel mm	: 13.50
Tolerance mm	: ± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm	: 1125
Rack travel in mm	: 13.00
Tolerance mm	: ± 1.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1050
Aneroid pressure	
hPa	: 1600
Del. quantity	
cm ³ /1000 strokes	: 340.0
Tolerance	
cm ³ /1000 strokes	: ± 1.0
Check tolerance	
cm ³ /1000S.	: ± 4.0
Speed	
Tolerance	
cm ³ /1000 strokes	: 6.0
Check tolerance	
cm ³ /1000S.	: 9.0

CONTROL LEVER

control lever	
position degree	: 119.0
tolerance degree	: ± 4.0

RATED SPEED

rack travel mm	: 13.00
Rated speed rpm	: 1090
Tolerance 1/min	: ± 5
<hr/>	
rack travel mm	: 4.00
Rated speed rpm	: 1140
Tolerance 1/min	: ± 15
<hr/>	
rack travel mm	: 0.50
Tolerance mm	: ± 0.50
Rated speed rpm	: 1300

LOW IDLE

control lever
position degree : 71.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 4.80
Tolerance mm : \pm 0.10

Rated speed rpm : 200

CRT mm min. : $>$ 6.30

Rated speed rpm : 345

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 14.00
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 1600
rack travel mm : 14.00
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 400
rack travel mm : 9.00
Tolerance mm : \pm 0.20

Rated speed rpm : 400

Pressure hPa : 570
rack travel mm : 10.50
Tolerance mm : \pm 0.10

Pressure hPa : 1100
rack travel mm : 13.00
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 250.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 13.00
Rated speed rpm : 1090
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 9.00
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 28.06.96
Test oil : ISO 4113

Combination No. : 0 402 648 798

Injection pump
Pump designation : PE8P120A320LS7830
EP type number : 0 412 628 844

Governor
Governor design. : RQV350...1000PA1234
Governor no. : 0 421 814 153

Cust. part No. : 0230746502

Customer-spec. information
Customer : MTU
Motor : 8V 183-02
Power KW : 365.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 85
Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.25
Tolerance mm : ± 0.75

Firing order : 8- 7- 2- 6- 3
 : - 5- 4- 1

Phasing : 0-45-90-135-180
 : -225-270-315
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 13.00
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 237.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000s. : \pm 4.0

Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000s. : 9.0

Rated speed rpm : 350

Rack travel in mm : 5.00
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 20.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000s. : \pm 6.0

Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000s. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 350
guide sleeve
travel mm : 1.53
Tolerance mm : \pm 0.20

Rated speed rpm : 1055
guide sleeve
travel mm : 6.50
Tolerance mm : \pm 0.15

Rated speed rpm : 870
guide sleeve
travel mm : 4.94
Tolerance mm : \pm 0.25

Rated speed rpm : 404
guide sleeve
travel mm : 2.52
Tolerance mm : \pm 0.25

Rated speed rpm : 454
guide sleeve
travel mm : 3.07

Tolerance mm : \pm 0.25

Rated speed rpm : 570
guide sleeve
travel mm : 3.45
Tolerance mm : \pm 0.25

Rated speed rpm : 1241
guide sleeve
travel mm : 10.00
Tolerance mm : \pm 0.25

Rated speed rpm : 1330
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1220

Rack travel in mm : 12.00
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 2000

Del. quantity
cm³/1000 strokes : 237.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000s. : \pm 4.0

Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000s. : 9.0

CONTROL LEVER

control lever
position degree : 109.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 12.00
Rated speed rpm : 1045
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1150
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 66.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 5.00
Tolerance mm : \pm 0.10

Rated speed rpm : 250
CRT mm min. : $>$ 6.70
Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 13.00
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 13.00
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 2000
rack travel mm : 13.00
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 7.00
Tolerance mm : \pm 0.15

Rated speed rpm : 500

Pressure hPa : 400
rack travel mm : 8.45

C26

Tolerance mm : \pm 0.05

Pressure hPa : 1000
rack travel mm : 11.40
Tolerance mm : \pm 0.15

START CUT-OUT

Rated speed rpm : $>$ 280
Rated speed rpm : $<$ 290

Check
speed 1/min : $>$ 260
Check
speed 1/min : $<$ 310

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 2000
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 238.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 92.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 12.00
Rated speed rpm : 1045
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 230.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 24.06.96

Test oil : ISO 4113

Combination No. : 0 402 678 812

Injection pump

Pump designation : PE8P120A320LS7801-2

EP type number : 0 412 628 825

Governor

Governer design. : RSV350...1050P0A535

: -2

Governer no. : 0 421 833 318

Cust. part No. :

Customer-spec. information

Customer : MB-NFZ

Motor : OM442A *

Power KW : 260.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Overflow quantity

min. L/h : 110

Tolerance L/h : ± 10.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 2.5

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 5.25

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Firing order : 8- 7- 2- 6- 3

: - 5- 4- 1

Phasing : 0-45-90-135-180

: -225-270-315

Tolerance : ± 0.30

Check

tolerance °NW : ± 0.50

BASIC SETTING

Rated speed rpm : 1030

Rack travel in mm : 12.85

Tolerance mm : ± 0.05

Del. quantity

cm³/1000 strokes : 180.0

Tolerance

cm³/1000 strokes : ± 1.0

Check tolerance

cm³/1000s. : ± 4.0

Speed

Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 5.70
Tolerance mm : \pm 0.10

Del. quantity
cm3/1000 strokes : 18.0

Tolerance
cm3/1000 strokes : \pm 3.0

Check tolerance
cm3/1000S. : \pm 6.0

Spread
Tolerance
cm3/1000 strokes : 8.0

Check tolerance
cm3/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1030
Aneroid pressure
hPa : 1100

Del. quantity
cm3/1000 strokes : 180.0

Tolerance
cm3/1000 strokes : \pm 1.0

Check tolerance
cm3/1000S. : \pm 4.0

Spread
Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 90.0

tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 11.80
Rated speed rpm : 1075

Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1145

Tolerance 1/min : \pm 15

rack travel mm : 0.85
Tolerance mm : \pm 0.55

Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 67.0

tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 5.70

Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 400

Tolerance 1/min : \pm 35

Rated speed rpm : 100

CRT mm min. : $>$ 19.50

SET IDLE AUXILIARY SPRING

Rated speed rpm : 100

TORQUE CONTROL

Rated speed rpm : 1030
rack travel mm : 12.85

Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 14.50

Tolerance mm : \pm 0.10

Rated speed rpm : 950
rack travel mm : 13.20

Tolerance mm : \pm 0.10

Rated speed rpm : 830
rack travel mm : 13.90

Tolerance mm : \pm 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500

Pressure hPa : 420
rack travel mm : 0.80
Tolerance mm : \pm 0.05

Pressure hPa : 600
rack travel mm : 2.40
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1100
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 212.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 140.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 11.80
Rated speed rpm : 1075
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 190.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 18.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 26.06.96
Test oil : ISO 4113

Combination No. : 0 402 678 831

Injection pump
Pump designation : PE8P120A320LS7901
EP type number : 0 412 628 918

Governor
Governor design. : RSV350...1050POA651
Governor no. : 0 412 833 568

Cust. part No. : 0270745602

Customer-spec. information
Customer : MB-NFZ
Motor : OM442LA
Power KW : 297.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3
: - 5- 4- 1

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 13.80
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 213.0

Tolerance
cm³/1000 strokes : ± 1.5

Check tolerance
cm³/1000s. : ± 4.5

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 5.70
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Speed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 213.0

Tolerance
cm³/1000 strokes : ± 1.5

Check tolerance
cm³/1000S. : ± 4.5

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 89.0

RATED SPEED

rack travel mm : 12.80
Rated speed rpm : 1075
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1145
Tolerance 1/min : ± 15

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 67.0

Testing:

Rated speed rpm : 350
rack travel mm : 5.70
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 390
Tolerance 1/min : ± 30

Rated speed rpm : 100

CRT mm min. : > 19.50

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 13.80
Tolerance mm : ± 0.05

Rated speed rpm : 600
rack travel mm : 14.20
Tolerance mm : ± 0.10

Rated speed rpm : 860
rack travel mm : 14.00
Tolerance mm : ± 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500

Pressure hPa : 250
rack travel mm : 0.35
Tolerance mm : \pm 0.05

Pressure hPa : 800
rack travel mm : 2.40
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 221.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 143.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0

BREAKAWAY

Rack travel in mm : 12.80
Rated speed rpm : 1075
Tolerance 1/min : \pm 5

D05

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 250.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.07.96

Test oil : ISO 4113

Combination No. : 0 402 744 801

Injection pump

Pump designation : PES4P120A320RS7380

EP type number : 0 412 724 802

Governor

Governer design. : RQV275...1200PA1232K

Governer no. : 0 421 815 469

Cust. part No. : CCEP 5149B 66-237

Customer-spec. information

Customer : RENAULT V.I.

Motor : MIDR 04-02-26 B4

Power KW : 110.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 2 417 413 071

Inlet press. bar : 2.5

Overflow quantity

min. l/h : 95

Tolerance l/h : ± 10.0

Test nozzle holde assembly

: 1 688 901 105

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 5.00

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 11.00

Tolerance mm : ± 0.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Tolerance : ± 0.30

Check

tolerance °NW : ± 0.50

Start of delivery mark

°NW after s.o.d. : -0.30

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Barrel no. : 1

Beginning of delivery differende

betw. rack trav.

mm : 21.00

and maximum rack

travel : 11.00

Difference ° CS : 1.50

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 12.70
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 236.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325

Rack travel in mm : -6.60
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 40.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
guide sleeve
travel mm : 1.52
Tolerance mm : \pm 0.20

Rated speed rpm : 1272
guide sleeve
travel mm : 9.31
Tolerance mm : \pm 0.15

Rated speed rpm : 894
guide sleeve
travel mm : 6.60
Tolerance mm : \pm 0.25

Rated speed rpm : 560
guide sleeve
travel mm : 4.01
Tolerance mm : \pm 0.25

Rated speed rpm : 1650
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1482

Rack travel in mm : 11.70
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 236.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 296.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : -1.00
Rated speed rpm : 1280
Tolerance 1/min : \pm 15

rack travel mm : -8.70
Rated speed rpm : 1420
Tolerance 1/min : \pm 5

rack travel mm : -12.20

Tolerance mm : \pm 0.50
Rated speed rpm : 1500

LOW IDLE

control lever
position degree : 253.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 325
rack travel mm : -6.60
Tolerance mm : \pm 0.10

Rated speed rpm : 200

CRT mm min. : $<$ -4.60

Rated speed rpm : 390

TORQUE CONTROL

Rated speed rpm : 1200

Rated speed rpm : 700
rack travel mm : -1.15
Tolerance mm : \pm 0.10

Rated speed rpm : 350
rack travel mm : -2.90
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : -4.00
Tolerance mm : \pm 0.20

Rated speed rpm : 500

Pressure hPa : 200
rack travel mm : -3.40
Tolerance mm : \pm 0.20

Pressure hPa : 320
rack travel mm : -2.75
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 155
Rated speed rpm : $<$ 260

Check
speed 1/min : $>$ 135
Check
speed 1/min : $<$ 270

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 237.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 159.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 4.0

BREAKAWAY

Rack travel in mm : -1.00
Rated speed rpm : 1280
Tolerance 1/min : \pm 15

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 90.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000s. : \pm 19.0

LOW IDLE

Rated speed rpm : 325
Del. quantity
cm³/1000 strokes : 40.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.06.96
Test oil : ISO 4113
Combination No. : 0 402 746 602
Injection pump
Pump designation : PES6P120A320RS7359
: -1
EP type number : 0 412 726 949
Governor
Governor design. : RQ275/1050PA1217-1
Governor no. : 0 421 801 798

Cust. part No. : CCEP 5152A 66-229

Customer-spec. information
Customer : RENAULT V.I.
Motor : MIDRO62045 R41
Power KW : 223.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.70
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.25
Tolerance mm : ± 0.75

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

°NW after s.o.d. : -0.45
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 13.30
Tolerance mm : ± 0.05
Tolerance mm : ± 0.05

Del. quantity
cm3/1000 strokes : 281.0

Tolerance
cm3/1000 strokes : \pm 1.0

Check tolerance
cm3/1000S. : \pm 4.0

Spreed
Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : -7.30
Tolerance mm : \pm 0.10

Del. quantity
cm3/1000 strokes : 25.0

Tolerance
cm3/1000 strokes : \pm 2.0

Check tolerance
cm3/1000S. : \pm 5.0

Spreed
Tolerance

cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 2.19
Tolerance mm : \pm 0.20

Rated speed rpm : 1122
guide sleeve
travel mm : 6.36
Tolerance mm : \pm 0.15

Rated speed rpm : 1050
guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 408
guide sleeve
travel mm : 5.26
Tolerance mm : \pm 0.10

Rated speed rpm : 480
guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 1330
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : \pm 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure
hPa : 1000

Del. quantity
cm3/1000 strokes : 281.0

Tolerance
cm3/1000 strokes : \pm 1.0

Check tolerance
cm3/1000S. : \pm 4.0

Spreed
Tolerance

cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 276.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : -1.00
Rated speed rpm : 1115
Tolerance 1/min : \pm 15

rack travel mm : -9.30
Rated speed rpm : 1240
Tolerance 1/min : \pm 5

rack travel mm : -12.80
Tolerance mm : \pm 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 255.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : -7.30
Tolerance mm : \pm 0.10

rack travel mm : -11.30
Rated speed rpm : 395
Tolerance 1/min : \pm 20

Rated speed rpm : 200

CRT mm min. : $>$ -4.60

TORQUE CONTROL

Rated speed rpm : 600
Tolerance mm : \pm 0.05

Rated speed rpm : 1050
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : -2.35
Tolerance mm : \pm 0.20

Rated speed rpm : 500

Pressure hPa : 400
rack travel mm : -0.60
Tolerance mm : \pm 0.15

Pressure hPa : 240
rack travel mm : -1.55
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 195

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 215

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 289.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 174.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 4.0

BREAKAWAY

Rack travel in mm : -1.00
Rated speed rpm : 1115
Tolerance 1/min : \pm 15

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 145.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000s. : \pm 19.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 25.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.06.96
Test oil : ISO 4113

Combination No. : 0 402 746 604

Injection pump
Pump designation : PES6P120A720RS7366
EP type number : 0 412 726 933

Governor
Governor design. : RQV275...1100PA1208
: -1K
Governor no. : 0 421 815 492

Cust. part No. :

Customer-spec. information
Customer : IVECO-FRANCE
Motor : 8460.41C-3000

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 076

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 160
Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

Check
tolerance °NW : ± 0.40

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 11.40
Tolerance mm : ± 0.05

Del. quantity
cm3/1000 strokes : 203.0

Tolerance
cm3/1000 strokes : \pm 1.0

Check tolerance
cm3/1000S. : \pm 4.0

Spreed
Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 6.40
Tolerance mm : \pm 0.10

Del. quantity
cm3/1000 strokes : 19.0
Tolerance
cm3/1000 strokes : \pm 3.0
Check tolerance
cm3/1000S. : \pm 6.0

Spreed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275
guide sleeve
travel mm : 1.70
Tolerance mm : \pm 0.20

Rated speed rpm : 1180
guide sleeve
travel mm : 10.07
Tolerance mm : \pm 0.15

Rated speed rpm : 802
guide sleeve
travel mm : 6.49
Tolerance mm : \pm 0.25

Rated speed rpm : 460
guide sleeve
travel mm : 3.77
Tolerance mm : \pm 0.25

Rated speed rpm : 1440
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1295
Rack travel in mm : 10.65
Tolerance mm : \pm 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure
hPa : 1200
Del. quantity
cm3/1000 strokes : 203.0
Tolerance
cm3/1000 strokes : \pm 1.0
Check tolerance
cm3/1000S. : \pm 4.0
Spreed
Tolerance
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 118.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 10.60
Rated speed rpm : 1145
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1245
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 75.0

tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 275
rack travel mm : 6.40
Tolerance mm : \pm 0.10

Rated speed rpm : 175

CRT mm min. : $>$ 7.90

Rated speed rpm : 315

TORQUE CONTROL

Rated speed rpm : 600
rack travel mm : 11.40
Tolerance mm : \pm 0.05

Rated speed rpm : 1100
rack travel mm : 11.65
Tolerance mm : \pm 0.15

Rated speed rpm : 800
rack travel mm : 11.55
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1100
Pressure hPa : 1200
rack travel mm : 11.65
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1100
rack travel mm : 9.40
Tolerance mm : \pm 0.20

Rated speed rpm : 1100

Pressure hPa : 230
rack travel mm : 9.95
Tolerance mm : \pm 0.20

Pressure hPa : 360
rack travel mm : 11.15
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 180
Rated speed rpm : $<$ 220

Check
speed 1/min : $>$ 160
Check
speed 1/min : $<$ 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 1100
Del. quantity
cm³/1000 strokes : 236.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 141.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 10.60
Rated speed rpm : 1145
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 11.90
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 110.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 275

Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 02.07.96

Test oil : ISO 4113

Combination No. : 0 402 746 609

Injection pump

Pump designation : PES6P130A720/S7411

EP type number : 0 412 736 808

Governor

Governer design. : RQ275/950PA1274

Governer no. : 0 421 801 807

Cust. part No. : 645 739

Customer-spec. information

Customer : RABA

Motor : SIEHE BEMERKUNG

Power KW : 190.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Tolerance bar : ± 0.1

Overflow quantity

min. l/h : 160

Tolerance l/h : ± 20.0

Test nozzle holde assembly

: 1 688 901 105

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 5.50

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 20.50

Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.30

Check

tolerance °NW : ± 0.50

Start of delivery mark

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 11.90

Tolerance mm : ± 0.05

Del. quantity
cm3/1000 strokes : 224.0

Tolerance
cm3/1000 strokes : \pm 1.0

Check tolerance
cm3/1000S. : \pm 4.0

Spreed
Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 4.20
Tolerance mm : \pm 0.10

Del. quantity
cm3/1000 strokes : 24.0

Tolerance
cm3/1000 strokes : \pm 3.0

Check tolerance
cm3/1000S. : \pm 6.0

Spreed
Tolerance
cm3/1000 strokes : 8.0

Check tolerance
cm3/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275
guide sleeve
travel mm : 2.06
Tolerance mm : \pm 0.20

Rated speed rpm : 1007
guide sleeve
travel mm : 6.56
Tolerance mm : \pm 0.15

Rated speed rpm : 950
guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 361
guide sleeve
travel mm : 4.45
Tolerance mm : \pm 0.10

Rated speed rpm : 450
guide sleeve
travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 1200
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 900

Rack travel in mm : 20.00
Tolerance mm : \pm 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure
hPa : 1500

Del. quantity
cm3/1000 strokes : 224.0

Tolerance
cm3/1000 strokes : \pm 1.0

Check tolerance
cm3/1000S. : \pm 4.0

Spreed
Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 33.0
tolerance degree : \pm 4.0

control lever
position degree : 95.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 10.90
Rated speed rpm : 995
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1095
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50

Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 73.0
tolerance degree : \pm 4.0

control lever
position degree : 12.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 275
rack travel mm : 4.20
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 335
Tolerance 1/min : \pm 20

Rated speed rpm : 175

CRT mm min. : $>$ 6.80

TORQUE CONTROL

Rated speed rpm : 600
rack travel mm : 11.90
Tolerance mm : \pm 0.05

Rated speed rpm : 950
rack travel mm : 11.90
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 11.90
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 8.20
Tolerance mm : \pm 0.20

Rated speed rpm : 500

D20

Pressure hPa : 260
rack travel mm : 9.20
Tolerance mm : \pm 0.15

Pressure hPa : 440
rack travel mm : 11.00
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $<$ 100
Rated speed rpm : $>$ 195

Check
speed 1/min : $<$ 80
Check
speed 1/min : $>$ 215

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 219.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 147.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 10.90
Rated speed rpm : 995
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 110.0

Tolerance
cm3/1000 strokes : \pm 20.0
Check tolerance
cm3/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 275
Del. quantity
cm3/1000 strokes : 24.0
Tolerance
cm3/1000 strokes : \pm 3.0
Check tolerance
cm3/1000S. : \pm 6.0
Speed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.07.96
Test oil : ISO 4113

Combination No. : 0 402 746 997

Injection pump
Pump designation : PES6P120A720RS7224
: -2
EP type number : 0 412 726 893

Governor
Governor design. : RQV275...1100PA975
: -3K
Governor no. : 0 421 815 350

Cust. part No. :

Customer-spec. information
Customer : IVECO-AIFO
Motor : 8361 SRM 40.10

TEST LENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 076

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 140
Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.15
Tolerance mm : ± 0.05

Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

Check
tolerance °NW : ± 0.40

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.75
Tolerance mm : ± 0.05

Del. quantity
cm3/1000 strokes : 218.0

Tolerance
cm3/1000 strokes : \pm 1.0

Check tolerance
cm3/1000S. : \pm 4.0

Spreed
Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 5.50
Tolerance mm : \pm 0.10

Del. quantity
cm3/1000 strokes : 26.0
Tolerance

cm3/1000 strokes : \pm 3.0

Check tolerance
cm3/1000S. : \pm 6.0

Spreed
Tolerance
cm3/1000 strokes : 8.0

Check tolerance
cm3/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275
guide sleeve
travel mm : 2.00
Tolerance mm : \pm 0.20

Rated speed rpm : 1150
guide sleeve
travel mm : 10.45
Tolerance mm : \pm 0.15

Rated speed rpm : 764
guide sleeve
travel mm : 6.24
Tolerance mm : \pm 0.25

Rated speed rpm : 430
guide sleeve
travel mm : 3.63
Tolerance mm : \pm 0.25

Rated speed rpm : 1350
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1210

Rack travel in mm : 10.70
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1200

Del. quantity
cm3/1000 strokes : 218.0

Tolerance
cm3/1000 strokes : \pm 1.0

Check tolerance
cm3/1000S. : \pm 4.0

Spreed
Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 120.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 11.70
Rated speed rpm : 1145
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1235
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 73.0

tolerance degree : + 4.0

Testing:

Rated speed rpm : 275
rack travel mm : 5.50
Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 6.70

Rated speed rpm : 335

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 12.75
Tolerance mm : + 0.05

Rated speed rpm : 900
rack travel mm : 12.75
Tolerance mm : + 0.10

Rated speed rpm : 500
rack travel mm : 11.80
Tolerance mm : + 0.10

Rated speed rpm : 700
rack travel mm : 12.50
Tolerance mm : + 0.10

Rated speed rpm : 350
rack travel mm : 11.40
Tolerance mm : + 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 900
Pressure hPa : 1200
rack travel mm : 12.75
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 900
rack travel mm : 7.50
Tolerance mm : + 0.20

Rated speed rpm : 900

Pressure hPa : 410
rack travel mm : 8.80

Tolerance mm : + 0.20

Pressure hPa : 750
rack travel mm : 11.35
Tolerance mm : + 0.05

START CUT-OUT

Rated speed rpm : > 170
Rated speed rpm : < 220

Check
speed 1/min : > 150
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 900
Del. quantity
cm³/1000 strokes : 228.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0

Aneroid pressure
hPa : 1200
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 243.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 120.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

BREAKAWAY

Rack travel in mm : 11.70
Rated speed rpm : 1145
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 140.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 275
Del. quantity
cm³/1000 strokes : 26.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.07.96
Test oil : ISO 4113
Combination No. : 0 402 846 054
Injection pump
Pump designation : PE6P120A320RS8017
EP type number : 0 412 826 018
Governor
Governor design. : RQV300...1100PA1017
: -1
Governor no. : 0 421 814 023
Cust. part No. : 3826087 P03 v.10/95

Customer-spec. information

Customer : PENTA
Motor : TWD 1030 ME
Power KW : 212.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 2 417 413 078
Inlet press. bar : 2.5
Tolerance bar : ± 0.1
Test nozzle holder
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 008

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 4.15
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 7.80
Tolerance mm : ± 0.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50
Start of delivery mark
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 750
Rack travel in mm : 11.05
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 205.0
Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : +- 4.0

Spreed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 11.0

Rated speed rpm : 300

Rack travel in mm : 4.40
Tolerance mm : +- 0.30
Del. quantity
cm³/1000 strokes : 18.0
Tolerance
cm³/1000 strokes : +- 2.5
Check tolerance
cm³/1000S. : +- 5.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.19
Tolerance mm : +- 0.25

Rated speed rpm : 1137
guide sleeve
travel mm : 8.19
Tolerance mm : +- 0.25

Rated speed rpm : 816
guide sleeve
travel mm : 5.27
Tolerance mm : +- 0.25

Rated speed rpm : 385
guide sleeve
travel mm : 1.98
Tolerance mm : +- 0.25

Rated speed rpm : 435
guide sleeve
travel mm : 2.45
Tolerance mm : +- 0.25

Rated speed rpm : 530

guide sleeve
travel mm : 3.11
Tolerance mm : +- 0.25

Rated speed rpm : 1400
guide sleeve
travel mm : 11.50
Tolerance mm : +- 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1250
Rack travel in mm : 10.00
Tolerance mm : +- 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 750
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 205.0
Tolerance
cm³/1000 strokes : +- 1.0
Check tolerance
cm³/1000S. : +- 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 11.0

CONTROL LEVER

control lever
position degree : 58.0
tolerance degree : +- 4.0

control lever
position degree : 114.0
tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 10.05
Rated speed rpm : 1125
Tolerance 1/min : +- 5

rack travel mm : 4.00
Rated speed rpm : 1210
Tolerance 1/min : +- 15

rack travel mm : 0.50
Tolerance mm : +- 0.50
Rated speed rpm : 1320

LOW IDLE

control lever
position degree : 80.0
tolerance degree : \pm 4.0

control lever
position degree : 15.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 4.40
Tolerance mm : \pm 0.30

Rated speed rpm : 200

CRT mm min. : $>$ 6.00

Rated speed rpm : 330

TORQUE CONTROL

Rated speed rpm : 750
rack travel mm : 11.05
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 11.05
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 7.80
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 780
rack travel mm : 2.90
Tolerance mm : \pm 0.20

Pressure hPa : 300
rack travel mm : 0.25

Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 132.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 10.05
Rated speed rpm : 1125
Tolerance 1/min : \pm 5

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 18.0
Tolerance
cm³/1000 strokes : \pm 2.5
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.02.96
Test oil : ISO 4113
Combination No. : 0 402 946 302
Injection pump
Pump designation : PES6P120A720LS8514
EP type number : 0 412 926 210
Governor
Governor design. : RQV250...950PA1209K
Governor no. : 0 421 815 972

Cust. part No. : 1369074

Customer-spec. information
Customer : SCANIA
Motor : DSC1206

TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 2.5

Test nozzle holder
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

E01

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery blocking

*NW after s.o.d. : 180.00
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 825

Rack travel in mm : 13.45
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 375.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 11.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 14.0

Rated speed rpm : 250

Rack travel in mm : 4.60
Tolerance mm : +- 0.30

Del. quantity
cm³/1000 strokes : 22.0

Tolerance
cm³/1000 strokes : +- 3.0

Check tolerance
cm³/1000S. : +- 6.0

Spread
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 250
guide sleeve
travel mm : 1.67
Tolerance mm : +- 0.20

Rated speed rpm : 1017
guide sleeve
travel mm : 9.08
Tolerance mm : +- 0.15

Rated speed rpm : 661
guide sleeve
travel mm : 5.50
Tolerance mm : +- 0.25

Rated speed rpm : 302
guide sleeve
travel mm : 2.44
Tolerance mm : +- 0.25

Rated speed rpm : 352
guide sleeve
travel mm : 3.14

Tolerance mm : +- 0.25

Rated speed rpm : 390
guide sleeve
travel mm : 3.50
Tolerance mm : +- 0.25

Rated speed rpm : 1310
guide sleeve
travel mm : 13.50
Tolerance mm : +- 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1154

Rack travel in mm : 12.45
Tolerance mm : +- 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 825
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 375.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 11.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 14.0

CONTROL LEVER

control lever
position degree : 61.0
tolerance degree : +- 4.0

control lever
position degree : 115.0
tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 11.70
Rated speed rpm : 995
Tolerance 1/min : +- 5

rack travel mm : 4.00
Rated speed rpm : 1110
Tolerance 1/min : +- 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 72.0
tolerance degree : \pm 4.0

control lever
position degree : 18.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 250
rack travel mm : 4.60
Tolerance mm : \pm 0.30

Rated speed rpm : 150

CRT mm min. : $>$ 6.10

Rated speed rpm : 275

TORQUE CONTROL

Rated speed rpm : 825
rack travel mm : 13.45
Tolerance mm : \pm 0.05

Rated speed rpm : 650
rack travel mm : 12.50
Tolerance mm : \pm 0.10

Rated speed rpm : 950
rack travel mm : 12.75
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 825
Pressure hPa : 1500
rack travel mm : 13.45
Tolerance mm : \pm 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 825

E03

rack travel mm : 7.20
Tolerance mm : \pm 0.20

Rated speed rpm : 825

Pressure hPa : 435
rack travel mm : 8.90
Tolerance mm : \pm 0.15

Pressure hPa : 700
rack travel mm : 10.10
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 170

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 190

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 378.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000s. : \pm 11.0

Aneroid pressure
hPa : 1500
Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 331.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000s. : \pm 10.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 197.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 4.0

BREAKAWAY

Rack travel in mm : 11.70
Rated speed rpm : 995
Tolerance 1/min : +- 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.20
Tolerance mm : +- 0.50

LOW IDLE

Rated speed rpm : 250
Del. quantity
cm³/1000 strokes : 22.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 6.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.07.95
Test oil : ISO 4113
Combination No. : 0 403 244 045A
Injection pump
Pump designation : PES4MW100/720RS1519
: -3
EP type number : 0 413 204 018
Governor
Governor design. : RQV300...1300MW132
: -3
Governor no. : 0 420 083 296
Cust. part No. : 0240740302

Customer-spec. information
Customer : MB-NFZ
Motor : OM364LA
Power KW : 77.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 4.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.00
Tolerance mm : ± 1.00

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1270

Rack travel in mm : 13.00
Tolerance mm : ± 0.05

Del. quantity
cm3/1000 strokes : 89.0

Tolerance
cm3/1000 strokes : ± 1.0

Check tolerance
cm3/1000S. : ± 3.0

Speed
Tolerance
cm3/1000 strokes : 4.5

Check tolerance
cm³/1000S. : 7.0

Rated speed rpm : 300

Rack travel in mm : 4.00

Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 12.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 4.5

Spreed
Tolerance
cm³/1000 strokes : 2.0

Check tolerance
cm³/1000S. : 4.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300

guide sleeve
travel mm : 0.91

Tolerance mm : ± 0.20

Rated speed rpm : 1353

guide sleeve
travel mm : 7.02

Tolerance mm : ± 0.15

Rated speed rpm : 1090

guide sleeve
travel mm : 5.21

Tolerance mm : ± 0.25

Rated speed rpm : 790

guide sleeve
travel mm : 3.98

Tolerance mm : ± 0.25

Rated speed rpm : 1759

guide sleeve
travel mm : 12.00

Tolerance mm : ± 0.25

Rated speed rpm : 1870

guide sleeve
travel mm : 13.50

Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1500

Rack travel in mm : 10.00

Tolerance mm : ± 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300

Aneroid pressure
hPa : 700

Del. quantity
cm³/1000 strokes : 89.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spreed
Tolerance
cm³/1000 strokes : 4.5

Check tolerance
cm³/1000S. : 7.0

CONTROL LEVER

control lever
position degree : 111.0

tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 12.00

Rated speed rpm : 1345

Tolerance 1/min : ± 10

rack travel mm : 4.00

Rated speed rpm : 1470

Tolerance 1/min : ± 5

rack travel mm : 0.50

Tolerance mm : ± 0.50

Rated speed rpm : 1550

LOW IDLE

control lever
position degree : 74.0

tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300

rack travel mm : 4.00

Tolerance mm : ± 0.10

Rated speed rpm : 200
CRT mm min. : > 4.70

TORQUE CONTROL

Rated speed rpm : 1270
rack travel mm : 13.00
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 13.00
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 13.00
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 230
rack travel mm : 0.90
Tolerance mm : \pm 0.10

Pressure hPa : 150
rack travel mm : 0.30
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 200

Check
speed 1/min : > 80
Check
speed 1/min : < 220

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 700
Rated speed rpm : 750

Del. quantity
cm3/1000 strokes : 82.0
Tolerance
cm3/1000 strokes : \pm 1.5
Check tolerance
cm3/1000S. : \pm 4.0
Spreed
Tolerance
cm3/1000 strokes : 6.0
Check tolerance
cm3/1000S. : 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 56.0
Tolerance
cm3/1000 strokes : \pm 1.0
Check tolerance
cm3/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 12.00
Rated speed rpm : 1345
Tolerance 1/min : \pm 10

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 120.0
Tolerance
cm3/1000 strokes : \pm 5.0
Check tolerance
cm3/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm3/1000 strokes : 12.0
Tolerance
cm3/1000 strokes : \pm 2.0
Check tolerance
cm3/1000S. : \pm 4.5
Spreed
Tolerance
cm3/1000 strokes : 2.0
Check tolerance
cm3/1000S. : 4.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.07.96
Test oil : ISO 4113
Combination No. : 0 400 866 227
Injection pump
Pump designation : PES6A95D410/3RS2907
EP type number : 0 410 896 884
Governor
Governor design. : RSV325...1250A5C870L
Governor no. : 0 420 232 625

Cust. part No. : 0423 1964 KY

Customer-spec. information
Customer : KHD-DMI
Motor : BF6L 913
Power KW : 118.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 13.00
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 82.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 8.0

Rated speed rpm : 325

Rack travel in mm : 9.40
Tolerance mm : \pm 0.10
Del. quantity
cm3/1000 strokes : 14.5
Tolerance
cm3/1000 strokes : \pm 2.0
Check tolerance
cm3/1000S. : \pm 4.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800
Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 3.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
Aneroid pressure
hPa : 1000
Del. quantity
cm3/1000 strokes : 82.5
Tolerance
cm3/1000 strokes : \pm 1.0
Check tolerance
cm3/1000S. : \pm 3.0
Speed
Tolerance
cm3/1000 strokes : 3.5
Check tolerance
cm3/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 103.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 12.00
Rated speed rpm : 1295
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1355
Tolerance 1/min : \pm 15

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1520

rack travel mm : 4.00
Rated speed rpm : 1375

LOW IDLE

control lever
position degree : 69.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 8.90

Testing:

Rated speed rpm : 325
rack travel mm : 9.40
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 500
Tolerance 1/min : \pm 30

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 13.00
Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 14.20
Tolerance mm : \pm 0.10

Rated speed rpm : 750
rack travel mm : 14.00
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 14.20
Tolerance mm : \pm 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 13.50
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 250
rack travel mm : 13.80
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 85.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 69.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 3.0

BREAKAWAY

Rack travel in mm : 12.00
Rated speed rpm : 1295
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 1.00

Del. quantity
cm³/1000 strokes : 120.0
Tolerance
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000s. : \pm 10.0

LOW IDLE

Rated speed rpm : 325
Del. quantity
cm³/1000 strokes : 14.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 4.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.07.96
Test oil : ISO 4113

Combination No. : 0 402 066 702

Injection pump
Pump designation : PES6P110A120RS3336
: -1
EP type number : 0 412 016 751

Governor
Governor design. : RSV550...1100P2A586
: -1
Governor no. : 0 421 833 480

Cust. part No. : 3926887

Customer-spec. information
Customer : CDC
Motor : 6CTA
Power KW : 194.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 086

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

*NW after s.o.d. : 8.00
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

Beginning of delivery difference

and maximum rack
travel : 15.00
Difference ° CS : 1.50

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 14.25
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 187.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 550

Rack travel in mm : 5.10
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 26.5

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.5

Spread
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100

Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 187.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 96.0

tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 13.25
Rated speed rpm : 1185

Tolerance 1/min : \pm 5

rack travel mm : 7.80
Rated speed rpm : 1235

Tolerance 1/min : \pm 5

rack travel mm : 0.85
Tolerance mm : \pm 0.55

Rated speed rpm : 1390

LOW IDLE

control lever
position degree : 67.5

tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 550
rack travel mm : 4.60

Testing:

Rated speed rpm : 550
rack travel mm : 5.10

Tolerance mm : \pm 0.10

Rated speed rpm : 100
CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 14.25
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1000
Pressure hPa : 1500

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1000
rack travel mm : 11.10
Tolerance mm : \pm 0.20

Rated speed rpm : 1000

Pressure hPa : 995
rack travel mm : 13.45
Tolerance mm : \pm 0.20

Pressure hPa : 655
rack travel mm : 12.05
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 122.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 13.25
Rated speed rpm : 1185

E14

Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.00
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 154.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 26.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 6.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.07.96
Test oil : ISO 4113
Combination No. : 0 400 196 003
Injection pump
Pump designation : PES6M60C320RS206
EP type number : 0 410 066 001
Governor
Governor design. : RE22
Governor no. : 0 420 090 004

Cust. part No. :

Customer-spec. information
Customer : MB-PKW
Motor : OM 606 D30 LA
Power KW : 130.0

TEST BENCH REQUIREMENTS

Inlet line : 1.1;

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 469 990 351

Inlet press. bar : 1.0
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 0 688 901 111

Opening pressure
bar : 148.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

Pump-specific values
in Section (B)
must be observed!

(A) INJECTION PUMP SETTINGS
No basic setting.
Setting of constant delivery
under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 1.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 17.00
Tolerance mm : ± 1.00

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery blocking

*NW after s.o.d. : 17.00
Tolerance : ± 0.20
Check
tolerance *NW : ± 0.30

Barrel no. : 1

(B) POSITIONER TESTING
Warm-up time: 3 minutes at
n=600 min-1, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min-1: 0

Setting point
(P, R and H pump)

Uact V : 3.100
CRT mm : 13.00
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(P, R and H pump)

Uact V : 1.700
CRT mm : 6.15
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Setting point
(M pump)

Uact V : 3.100
CRT mm : 12.50
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(M pump)

Uact V : 1.700
CRT mm : 5.50
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Stop position

Uact V : Value with
deenergised adjusting magnet
and control rod in
stop position.

CRT mm : 0.75
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR
(All P and R pumps not
H and M pumps)

Test with control rod
in stop position

Engine speed min-1: 60
Amplitude V : 1.4
Tolerance V : +/- 0.6
Check
tolerance V : +/- 1.20

Engine speed min-1: 600
Difference
Amplitude to
Amplitude V : max.1.4

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 1000
Uact V : 3.250
Del. quantity
cm3/1000 strokes : 60.0
Tolerance
cm3/1000 strokes : +/- 0.5
Check tolerance
cm3/1000s. : +/- 2.0
Speed
Tolerance
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000s. : 3.0

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 2200
Uact V : 3.250
Del. quantity
cm3/1000 strokes : 64.0
Check tolerance
cm3/1000s. : +/- 2.0
Speed
Check tolerance
cm3/1000s. : 3.5

Rated speed rpm : 500
Uact V : 3.250
Del. quantity
cm3/1000 strokes : 55.0
Check tolerance
cm3/1000s. : +/- 2.0
Speed
Check tolerance
cm3/1000s. : 3.0

TEST POINT L1

Rated speed rpm : 310

Uact V	:	1.950
Del. quantity		
cm ³ /1000 strokes	:	11.5
Tolerance		
cm ³ /1000 strokes	: +	2.2
Speed		
Tolerance		
cm ³ /1000 strokes	:	1.5
Check tolerance		
cm ³ /1000s.	:	2.0

STARTING FUEL DELIVERY

Rated speed rpm	:	100
Uact V	:	3.250
Del. quantity		
cm ³ /1000 strokes	:	53.2
Check tolerance		
cm ³ /1000s.	: +	2.5
Speed		
Tolerance		
cm ³ /1000 strokes	:	8.0
Check tolerance		
cm ³ /1000s.	:	8.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 05.07.96
Test oil : ISO 4113
Combination No. : 0 401 846 571
Injection pump
Pump designation : PE6P110A32ORS856
EP type number : 0 411 816 170
Governor
Governor design. : RQV250...1150PA1313
Governor no. : 0 421 814 183

Cust. part No. : 836354722

Customer-spec. information
Customer : SISU
Motor : 612 DSI
Power KW : 185.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 025
Inlet press. bar : 1.5
Tolerance bar : ± 0.1
Test nozzle holder
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 015
Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 3.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 0.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50
Start of delivery mark
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700
Rack travel in mm : 12.05
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 140.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000s. : ± 4.0

Spreed	
Tolerance	
cm3/1000 strokes	: 4.0
Check tolerance	
cm3/1000S.	: 7.5
Rated speed rpm	: 325
Rack travel in mm	: 6.20
Tolerance mm	: + 0.10
Del. quantity	
cm3/1000 strokes	: 14.0
Tolerance	
cm3/1000 strokes	: + 2.0
Check tolerance	
cm3/1000S.	: + 4.5
Spreed	
Tolerance	
cm3/1000 strokes	: 3.0
Check tolerance	
cm3/1000S.	: 6.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 325
guide sleeve	
travel mm	: 2.03
Tolerance mm	: + 0.20

Rated speed rpm	: 1207
guide sleeve	
travel mm	: 8.36
Tolerance mm	: + 0.15

Rated speed rpm	: 800
guide sleeve	
travel mm	: 5.24
Tolerance mm	: + 0.25

Rated speed rpm	: 460
guide sleeve	
travel mm	: 3.08
Tolerance mm	: + 0.25

Rated speed rpm	: 1490
guide sleeve	
travel mm	: 11.50
Tolerance mm	: + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm	: 1312
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Rack travel in mm	: 11.05
Tolerance mm	: + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 700
Aneroid pressure	
hPa	: 700
Del. quantity	
cm3/1000 strokes	: 140.0
Tolerance	
cm3/1000 strokes	: + 1.0
Check tolerance	
cm3/1000S.	: + 4.0
Spreed	
Tolerance	
cm3/1000 strokes	: 4.0
Check tolerance	
cm3/1000S.	: 7.5

CONTROL LEVER

control lever	
position degree	: 52.0
tolerance degree	: + 4.0

control lever	
position degree	: 115.0
tolerance degree	: + 4.0

RATED SPEED

rack travel mm	: 11.00
Rated speed rpm	: 1195
Tolerance 1/min	: + 5

rack travel mm	: 4.00
Rated speed rpm	: 1295
Tolerance 1/min	: + 15

rack travel mm	: 0.50
Tolerance mm	: + 0.50
Rated speed rpm	: 1450

LOW IDLE

control lever	
position degree	: 87.0
tolerance degree	: + 4.0

control lever	
position degree	: 20.0

tolerance degree : + 4.0

Testing:

Rated speed rpm : 325
rack travel mm : 6.20
Tolerance mm : + 0.10

Rated speed rpm : 100
CRT mm min. : > 7.70
Rated speed rpm : 413

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 12.05
Tolerance mm : + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 12.05
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.40
Tolerance mm : + 0.10

Rated speed rpm : 500
Pressure hPa : 270
rack travel mm : 10.80
Tolerance mm : + 0.10

Pressure hPa : 415
rack travel mm : 11.65
Tolerance mm : + 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm3/1000 strokes : 104.0

E20

Tolerance
cm3/1000 strokes : + 1.5
Check tolerance
cm3/1000S. : + 4.0

BREAKAWAY

Rack travel in mm : 11.00
Rated speed rpm : 1195
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : + 0.50
Del. quantity
cm3/1000 strokes : 210.0
Tolerance
cm3/1000 strokes : + 10.0
Check tolerance
cm3/1000S. : + 14.0

LOW IDLE

Rated speed rpm : 325
Del. quantity
cm3/1000 strokes : 14.0
Tolerance
cm3/1000 strokes : + 2.0
Check tolerance
cm3/1000S. : + 4.5
Speed
Tolerance
cm3/1000 strokes : 3.0
Check tolerance
cm3/1000S. : 6.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.07.96
Test oil : ISO 4113

Combination No. : 0 402 046 850

Injection pump
Pump designation : PES6P120A320RS3320
EP type number : 0 412 026 763

Governor
Governor design. : RQV275...1000PA995
: -2
Governor no. : 0 421 813 940

Cust. part No. : CCEP-5134 66-211

Customer-spec. information
Customer : RENAULT V.I.
Motor : MIDR 063540 M/3
Power KW : 236.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 071

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.40
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 19.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 12.55

Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 242.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : -7.40
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 25.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 5.0

Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.66
Tolerance mm : \pm 0.10

Rated speed rpm : 1086
guide sleeve
travel mm : 8.46
Tolerance mm : \pm 0.10

Rated speed rpm : 773
guide sleeve
travel mm : 6.09
Tolerance mm : \pm 0.20

Rated speed rpm : 343
guide sleeve
travel mm : 2.33

Tolerance mm : \pm 0.20

Rated speed rpm : 393
guide sleeve
travel mm : 2.99
Tolerance mm : \pm 0.20

Rated speed rpm : 490
guide sleeve
travel mm : 3.81
Tolerance mm : \pm 0.20

Rated speed rpm : 1370
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1180

Rack travel in mm : 11.40
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 242.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 306.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : -1.00
Rated speed rpm : 1075
Tolerance 1/min : \pm 5

rack travel mm : -8.55
Rated speed rpm : 1195
Tolerance 1/min : \pm 15

rack travel mm : -11.95
Tolerance mm : \pm 0.55
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 248.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : -7.40
Tolerance mm : \pm 0.10

Rated speed rpm : 200
CRT mm max. : $<$ -5.90
Rated speed rpm : 365

TORQUE CONTROL

Rated speed rpm : 600
Rated speed rpm : 1000
Tolerance mm : \pm 0.10
Rated speed rpm : 600
rack travel mm : -4.00
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : -2.25
Tolerance mm : \pm 0.20

Rated speed rpm : 500

Pressure hPa : 160
rack travel mm : -1.70
Tolerance mm : \pm 0.10

Pressure hPa : 280
rack travel mm : -0.75
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 195

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 215

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 230.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : 1000
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 114.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0
Speed
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000S. : 14.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 156.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : -1.00
Rated speed rpm : 1075

Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 25.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.07.96
Test oil : ISO 4113

Combination No. : 0 402 646 605

Injection pump
Pump designation : PE6P130A720RS7197
EP type number : 0 412 636 815

Governor
Governor design. : RQV300...1000PA946
: -2
Governor no. : 0 421 814 021

Cust. part No. :

Customer-spec. information
Customer : IVECO-UNIC
Motor : 8210.22.800
Power KW : 224.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 140
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

E25

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.50

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.10
Tolerance mm : ± 0.05

<hr/>	
Del. quantity	
cm ³ /1000 strokes :	217.0
<hr/>	
Tolerance	
cm ³ /1000 strokes :	+ 1.0
<hr/>	
Check tolerance	
cm ³ /1000S. :	+ 4.0
<hr/>	
Speed	
Tolerance	
cm ³ /1000 strokes :	5.0
<hr/>	
Check tolerance	
cm ³ /1000S. :	8.0
<hr/>	
Rated speed rpm :	300
<hr/>	
Rack travel in mm :	5.10
Tolerance mm :	+ 0.10
Del. quantity	
cm ³ /1000 strokes :	20.0
Tolerance	
cm ³ /1000 strokes :	+ 3.0
Check tolerance	
cm ³ /1000S. :	+ 7.0
Speed	
Tolerance	
cm ³ /1000 strokes :	8.0
Check tolerance	
cm ³ /1000S. :	12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm :	1130
<hr/>	
Rack travel in mm :	10.90
Tolerance mm :	+ 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	1000
Aneroid pressure	
hPa :	900
Del. quantity	
cm ³ /1000 strokes :	217.0
Tolerance	
cm ³ /1000 strokes :	+ 1.0
Check tolerance	
cm ³ /1000S. :	+ 4.0
Speed	

Tolerance	
cm ³ /1000 strokes :	5.0
Check tolerance	
cm ³ /1000S. :	8.0

CONTROL LEVER

control lever	
position degree :	116.0
tolerance degree :	+ 4.0

RATED SPEED

rack travel mm :	11.10
Rated speed rpm :	1045
Tolerance 1/min :	+ 5

rack travel mm :	4.00
Rated speed rpm :	1145
Tolerance 1/min :	+ 15

rack travel mm :	0.50
Tolerance mm :	+ 0.50
Rated speed rpm :	1350

rack travel mm :	4.00
------------------	------

LOW IDLE

control lever	
position degree :	64.0
tolerance degree :	+ 4.0

Testing:

Rated speed rpm :	300
rack travel mm :	5.10
Tolerance mm :	+ 0.10

Rated speed rpm :	100
-------------------	-----

CRT mm min. :	> 6.60
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Rated speed rpm :	470
-------------------	-----

TORQUE CONTROL

Rated speed rpm :	1000
rack travel mm :	12.10
Tolerance mm :	+ 0.05

Rated speed rpm :	550
rack travel mm :	12.15
Tolerance mm :	+ 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 12.10
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.40
Tolerance mm : \pm 0.20

Rated speed rpm : 500

Pressure hPa : 265
rack travel mm : 10.60
Tolerance mm : \pm 0.10

Pressure hPa : 360
rack travel mm : 11.55
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 221.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 167.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 11.10

E27

Rated speed rpm : 1045
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 240.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 7.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 21.02.95
Test oil : ISO 4113

Combination No. : 0 402 646 625

Injection pump
Pump designation : PE6P120A320RS7300
EP type number : 0 412 626 886

Governor
Governor design. : RQV275...1000PA1077K
Governor no. : 0 421 815 358

Cust. part No. : 1280165

Customer-spec. information
Customer : DAF
Motor : WS 242 M
Power KW : 242.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 140
Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.35
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 15.00
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 980

Rack travel in mm : 15.05
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 228.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 5.30
Tolerance mm : +- 0.10

Del. quantity
cm³/1000 strokes : 17.0

Tolerance
cm³/1000 strokes : +- 3.0

Check tolerance
cm³/1000S. : +- 6.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275
guide sleeve
travel mm : 2.14
Tolerance mm : +- 0.20

Rated speed rpm : 1045
guide sleeve
travel mm : 9.83
Tolerance mm : +- 0.15

Rated speed rpm : 689
guide sleeve
travel mm : 6.43
Tolerance mm : +- 0.25

Rated speed rpm : 284
guide sleeve
travel mm : 2.27
Tolerance mm : +- 0.25

Rated speed rpm : 334
guide sleeve
travel mm : 3.08

Tolerance mm : +- 0.25

Rated speed rpm : 400
guide sleeve
travel mm : 3.92
Tolerance mm : +- 0.25

Rated speed rpm : 1310
guide sleeve
travel mm : 13.50
Tolerance mm : +- 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1140

Rack travel in mm : 14.00
Tolerance mm : +- 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 980
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 228.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 119.0
tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 14.00
Rated speed rpm : 1037
Tolerance 1/min : +- 5

rack travel mm : 4.00
Rated speed rpm : 1165
Tolerance 1/min : +- 15

rack travel mm : 0.70
Tolerance mm : +- 0.70
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 75.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 275
rack travel mm : 5.30
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 395
Tolerance 1/min : \pm 20

Rated speed rpm : 175

CRT mm min. : $>$ 8.50

TORQUE CONTROL

Rated speed rpm : 980
rack travel mm : 15.05
Tolerance mm : \pm 0.05

Rated speed rpm : 850
rack travel mm : 14.95
Tolerance mm : \pm 0.10

Rated speed rpm : 750
rack travel mm : 14.95
Tolerance mm : \pm 0.10

Rated speed rpm : 600
rack travel mm : 14.60
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 14.40
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 980
Pressure hPa : 1500
rack travel mm : 15.05
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 980
rack travel mm : 12.30
Tolerance mm : \pm 0.10

Rated speed rpm : 980

Pressure hPa : 480
rack travel mm : 14.35
Tolerance mm : \pm 0.05

Pressure hPa : 270
rack travel mm : 12.90
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 238.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 157.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 4.0

BREAKAWAY

Rack travel in mm : 14.00
Rated speed rpm : 1037
Tolerance 1/min : \pm 5

LOW IDLE

Rated speed rpm : 275
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000s. : +- 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.07.96
Test oil : ISO 4113

Combination No. : 0 402 646 650

Injection pump
Pump designation : PE6P130A720RS7354
EP type number : 0 412 636 835

Governor
Governor design. : RQV300...950PA1002
: -2K
Governor no. : 0 421 815 434

Cust. part No. :

Customer-spec. information
Customer : IVECO-FRANCE
Motor : 8210.42.4000

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 076

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

F04

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 13.00
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

Check
tolerance °NW : ± 0.40

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 950

Rack travel in mm : 13.20
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 274.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm3/1000S. : +- 4.0

Spreed
Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 5.40
Tolerance mm : +- 0.10
Del. quantity
cm3/1000 strokes : 35.0
Tolerance
cm3/1000 strokes : +- 3.0
Check tolerance
cm3/1000S. : +- 6.0
Spreed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.64
Tolerance mm : +- 0.20

Rated speed rpm : 1007
guide sleeve
travel mm : 8.73
Tolerance mm : +- 0.15

Rated speed rpm : 756
guide sleeve
travel mm : 6.16
Tolerance mm : +- 0.25

Rated speed rpm : 500
guide sleeve
travel mm : 3.78
Tolerance mm : +- 0.25

Rated speed rpm : 1340
guide sleeve
travel mm : 13.50
Tolerance mm : +- 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1185
Rack travel in mm : 12.00
Tolerance mm : +- 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 950
Aneroid pressure
hPa : 900
Del. quantity
cm3/1000 strokes : 274.0
Tolerance
cm3/1000 strokes : +- 1.0
Check tolerance
cm3/1000S. : +- 4.0
Spreed
Tolerance
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 114.0
tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 12.10
Rated speed rpm : 995
Tolerance 1/min : +- 5

rack travel mm : 4.00
Rated speed rpm : 1110
Tolerance 1/min : +- 15

rack travel mm : 0.50
Tolerance mm : +- 0.50
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 69.0
tolerance degree : +- 4.0

Testing:

Rated speed rpm : 275
rack travel mm : 5.40
Tolerance mm : \pm 0.10

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 950
rack travel mm : 13.20
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 12.75
Tolerance mm : \pm 0.10

Rated speed rpm : 550
rack travel mm : 12.05
Tolerance mm : \pm 0.10

Rated speed rpm : 300
rack travel mm : 11.80
Tolerance mm : \pm 0.30

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 950
Pressure hPa : 900
rack travel mm : 13.20
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 950
rack travel mm : 8.30
Tolerance mm : \pm 0.40

Rated speed rpm : 950

Pressure hPa : 320
rack travel mm : 9.85
Tolerance mm : \pm 0.20

Pressure hPa : 610
rack travel mm : 12.10
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 180
Rated speed rpm : $<$ 220

Check
speed 1/min : $>$ 160
Check
speed 1/min : $<$ 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 286.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 173.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 12.10
Rated speed rpm : 995
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 275
Del. quantity
cm³/1000 strokes : 35.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.07.96
Test oil : ISO 4113
Combination No. : 0 402 646 665
Injection pump
Pump designation : PE6P130A720RS7354
EP type number : 0 412 636 835
Governor
Governor design. : RQV300...950PA1002
: -3K
Governor no. : 0 421 815 491
Cust. part No. :

Customer-spec. information
Customer : IVECO-FRANCE
Motor : 8210.42K.3000

TEST BENCH REQUIREMENTS

Inlet line : 4.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 2 417 413 076
Inlet press. bar : 2.5
Tolerance bar : ± 0.1
Test nozzle holder
assembly : 1 688 901 105
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 075
Outside diameter : 8.0

F08

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 5.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 12.00
Tolerance mm : ± 0.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50
Start of delivery mark
Check
tolerance °NW : ± 0.40
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 950
Rack travel in mm : 12.05
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 244.0
Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm3/1000S. : +- 4.0

Speed
Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 5.40
Tolerance mm : +- 0.10
Del. quantity
cm3/1000 strokes : 35.0
Tolerance
cm3/1000 strokes : +- 3.0
Check tolerance
cm3/1000S. : +- 6.0
Speed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.64
Tolerance mm : +- 0.20

Rated speed rpm : 1025
guide sleeve
travel mm : 9.00
Tolerance mm : +- 0.15

Rated speed rpm : 764
guide sleeve
travel mm : 6.22
Tolerance mm : +- 0.25

Rated speed rpm : 500
guide sleeve
travel mm : 3.78
Tolerance mm : +- 0.25

Rated speed rpm : 1330
guide sleeve
travel mm : 13.50
Tolerance mm : +- 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1190
Rack travel in mm : 11.00
Tolerance mm : +- 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 950
Aneroid pressure
hPa : 1000
Del. quantity
cm3/1000 strokes : 244.0
Tolerance
cm3/1000 strokes : +- 1.0
Check tolerance
cm3/1000S. : +- 4.0
Speed
Tolerance
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 114.0
tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 11.00
Rated speed rpm : 1015
Tolerance 1/min : +- 5

rack travel mm : 4.00
Rated speed rpm : 1115
Tolerance 1/min : +- 15

rack travel mm : 0.50
Tolerance mm : +- 0.50
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 69.0
tolerance degree : +- 4.0

Testing:

Rated speed rpm : 275
rack travel mm : 5.40
Tolerance mm : \pm 0.10

Rated speed rpm : 200
CRT mm min. : $>$ 6.20
Rated speed rpm : 355

TORQUE CONTROL

Rated speed rpm : 950
rack travel mm : 12.05
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 11.85
Tolerance mm : \pm 0.10

Rated speed rpm : 550
rack travel mm : 11.40
Tolerance mm : \pm 0.10

Rated speed rpm : 300
rack travel mm : 10.90
Tolerance mm : \pm 0.30

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 950
Pressure hPa : 1000
rack travel mm : 12.05
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 950
rack travel mm : 8.40
Tolerance mm : \pm 0.40

Rated speed rpm : 950
Pressure hPa : 290
rack travel mm : 9.35
Tolerance mm : \pm 0.20

Pressure hPa : 500
rack travel mm : 11.10
Tolerance mm : \pm 0.05

START CUT-OUT

F10

Rated speed rpm : $>$ 180
Rated speed rpm : $<$ 220

Check
speed 1/min : $>$ 160
Check
speed 1/min : $<$ 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 264.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 174.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 11.00
Rated speed rpm : 1015
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 275

Del. quantity
cm³/1000 strokes : 35.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000s. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 28.06.96
Test oil : ISO 4113

Combination No. : 0 402 646 670

Injection pump
Pump designation : PE6P120A32ORS7421
EP type number : 0 412 626 956

Governor
Governor design. : RQV275...1150PA1296K
Governor no. : 0 421 815 523

Cust. part No. : 1316183

Customer-spec. information
Customer : DAF
Motor : PF 230 M
Power KW : 230.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 150
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1130

Rack travel in mm : 13.00
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 228.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spreed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : 5.00
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275
guide sleeve
travel mm : 1.71
Tolerance mm : ± 0.20

Rated speed rpm : 1201
guide sleeve
travel mm : 10.07
Tolerance mm : ± 0.15

Rated speed rpm : 811
guide sleeve
travel mm : 6.79
Tolerance mm : ± 0.25

Rated speed rpm : 450
guide sleeve
travel mm : 3.85
Tolerance mm : ± 0.25

Rated speed rpm : 1480
guide sleeve
travel mm : 13.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1321

Rack travel in mm : 12.25
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1130
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 228.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 119.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 12.00
Rated speed rpm : 1190
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1315
Tolerance 1/min : ± 15

rack travel mm : 0.70
Tolerance mm : ± 0.70
Rated speed rpm : 1450

LOW IDLE

control lever
position degree : 70.0

tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 275
rack travel mm : 5.00
Tolerance mm : \pm 0.10

Rated speed rpm : 175

CRT mm min. : > 7.60

Rated speed rpm : 330

TORQUE CONTROL

Rated speed rpm : 1130
rack travel mm : 13.00
Tolerance mm : \pm 0.05

Rated speed rpm : 1000
rack travel mm : 13.10
Tolerance mm : \pm 0.10

Rated speed rpm : 850
rack travel mm : 13.20
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 13.00
Tolerance mm : \pm 0.10

Rated speed rpm : 650
rack travel mm : 12.30
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 11.55
Tolerance mm : \pm 0.10

Rated speed rpm : 1150
rack travel mm : 13.00
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 875
Pressure hPa : 1500
rack travel mm : 13.45
Tolerance mm : \pm 0.10

MEASUREMENT

Pressure hPa : -

Rated speed rpm : 875
rack travel mm : 9.05
Tolerance mm : \pm 0.10

Rated speed rpm : 875

Pressure hPa : 490
rack travel mm : 11.50
Tolerance mm : \pm 0.05

Pressure hPa : 210
rack travel mm : 9.45
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 850
Del. quantity
cm³/1000 strokes : 252.0

Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 5.0

Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 167.0

Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 4.0

Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

BREAKAWAY

Rack travel in mm : 12.00
Rated speed rpm : 1190
Tolerance 1/min : \pm 5

LOW IDLE

Rated speed rpm : 275
Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.07.96
Test oil : ISO 4113

Combination No. : 0 402 648 790

Injection pump
Pump designation : PE8P130A920/5LS7867
EP type number : 0 412 638 805

Governor
Governor design. : RQV400...1000PA1285
Governor no. : 0 421 814 177

Cust. part No. :

Customer-spec. information
Customer : IVECO-FIAT
Motor : 8285.22.014
Power KW : 277.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 076

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 135
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.15
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.00
Tolerance mm : ± 0.50

Firing order : 1- 8- 4- 3- 6
: - 5- 7- 2

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.50

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 10.25
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 188.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 400

Rack travel in mm : 4.30
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 7.0

Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 400
guide sleeve
travel mm : 1.90
Tolerance mm : ± 0.20

Rated speed rpm : 1080
guide sleeve
travel mm : 8.57
Tolerance mm : ± 0.15

Rated speed rpm : 764
guide sleeve
travel mm : 5.74
Tolerance mm : ± 0.25

Rated speed rpm : 520
guide sleeve
travel mm : 3.66
Tolerance mm : ± 0.25

Rated speed rpm : 1320
guide sleeve
travel mm : 11.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1220
Rack travel in mm : 8.00
Tolerance mm : ± 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 550
Aneroid pressure
hPa : 900
Del. quantity
cm³/1000 strokes : 188.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 114.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 9.20
Rated speed rpm : 1070
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1160
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 65.0

tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 400
rack travel mm : 4.30
Tolerance mm : \pm 0.10

Rated speed rpm : 300
CRT mm min. : $>$ 5.80
Rated speed rpm : 430

TORQUE CONTROL

Rated speed rpm : 550
rack travel mm : 10.25
Tolerance mm : \pm 0.05

Rated speed rpm : 950
rack travel mm : 10.20
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 10.25
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 9.40
Tolerance mm : \pm 0.20

Rated speed rpm : 500

Pressure hPa : 330
rack travel mm : 9.60
Tolerance mm : \pm 0.10

Pressure hPa : 355
rack travel mm : 10.05
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 100

Check
speed 1/min : $>$ 80

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 185.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 157.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 9.20
Rated speed rpm : 1070
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 7.0
Speed

Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000s. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.07.96
Test oil : ISO 4113
Combination No. : 0 402 670 811
Injection pump
Pump designation : PE12P120A520/5RS7385
EP type number : 0 412 620 846
Governor
Governor design. : RSUV300...1150POA364
Governor no. : 0 421 829 112
Cust. part No. : 12277646KY0120-17

Customer-spec. information
Customer : MWM
Motor : TBD 616-V12
Power KW : 648.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 025
Inlet press. bar : 1.5
Tolerance bar : ± 0.1
Test nozzle holder
assembly : 1 688 901 019
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 075
Outside diameter : 8.0

F20

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 4.65
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 13.00
Tolerance mm : ± 0.50
Firing order : 1- 2- 9-10- 5- 6
 : - 11- 12- 3- 4
 : - 7- 8
Phasing : 0-30-60-90-120-150
 : -180-210-240-270
 : -300-330
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50
Start of delivery mark
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1150
Rack travel in mm : 12.60
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 262.0
Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : + 4.0

Spreed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 6.40
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 38.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800
Rack travel in mm : 0.50
Tolerance mm : + 0.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150
Aneroid pressure
hPa : 1800
Del. quantity
cm³/1000 strokes : 262.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 113.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.60
Rated speed rpm : 1193
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1270
Tolerance 1/min : + 15

rack travel mm : 1.00
Tolerance mm : + 0.70
Rated speed rpm : 1380

rack travel mm : 4.00
Rated speed rpm : 1280

LOW IDLE

control lever
position degree : 74.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 300
rack travel mm : 5.90

Testing:

Rated speed rpm : 300
rack travel mm : 6.40
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 450
Tolerance 1/min : + 30

TORQUE CONTROL

Rated speed rpm : 1150
rack travel mm : 12.60
Tolerance mm : + 0.05

Rated speed rpm : 800
rack travel mm : 12.60
Tolerance mm : + 0.10

Rated speed rpm : 500
rack travel mm : 12.60
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 1800
rack travel mm : 12.60
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 600
rack travel mm : 8.50
Tolerance mm : \pm 0.10

Rated speed rpm : 600

Pressure hPa : 780
rack travel mm : 9.60
Tolerance mm : \pm 0.10

Pressure hPa : 1600
rack travel mm : 12.45
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1800
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 261.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 131.0
Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 11.60
Rated speed rpm : 1193
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 16.00
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 347.0
Tolerance
cm³/1000 strokes : \pm 14.0
Check tolerance
cm³/1000S. : \pm 20.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 38.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.07.96
Test oil : ISO 4113
Combination No. : 0 402 678 829
Injection pump
Pump designation : PE8P120A520/5RS7384
EP type number : 0 412 628 909
Governor
Governor design. : RSUV300...1150POA364
Governor no. : 0 421 829 112

Cust. part No. : 12277644KY0120-17

Customer-spec. information
Customer : MWM
Motor : TBD 616 V8
Power KW : 432.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.65
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 13.00
Tolerance mm : ± 0.50

Firing order : 1- 8- 5- 4- 7
 : - 2- 3- 6

Phasing : 0-30-90-120-180
 : -210-270-300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 12.60
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 262.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 6.40
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 38.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Speed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150
Aneroid pressure
hPa : 1800

Del. quantity
cm³/1000 strokes : 262.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 115.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.60
Rated speed rpm : 1193

Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1270

Tolerance 1/min : ± 15

rack travel mm : 1.00
Tolerance mm : ± 0.70

Rated speed rpm : 1380

rack travel mm : 4.00
Rated speed rpm : 1285

LOW IDLE

control lever
position degree : 78.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 300
rack travel mm : 5.90

Testing:

Rated speed rpm : 300
rack travel mm : 6.40

Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 450

Tolerance 1/min : ± 30

TORQUE CONTROL

Rated speed rpm : 1150
rack travel mm : 12.60

Tolerance mm : ± 0.05

Rated speed rpm : 800
rack travel mm : 12.60

Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 1800
rack travel mm : 12.60
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 600
rack travel mm : 8.50
Tolerance mm : \pm 0.10

Rated speed rpm : 600

Pressure hPa : 780
rack travel mm : 9.60
Tolerance mm : \pm 0.20

Pressure hPa : 1600
rack travel mm : 12.45
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1800
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 261.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 131.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spreed

F25

Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 12.0

BREAKAWAY

Rack travel in mm : 11.60
Rated speed rpm : 1193
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 16.20
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 347.0
Tolerance
cm³/1000 strokes : \pm 14.0
Check tolerance
cm³/1000S. : \pm 20.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 38.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.07.96
Test oil : ISO 4113

Combination No. : 0 402 746 607

Injection pump
Pump designation : PES6P120A72ORS7409
EP type number : 0 412 726 956

Governor
Governor design. : RQV450...1100PA1270
Governor no. : 0 421 814 172

Cust. part No. :

Customer-spec. information
Customer : IVECO-FRANCE
Motor : 8465.41.014
Power KW : 190.0

TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 076

Inlet press. bar : 2.5

Overflow quantity
min. l/h : 185
Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.15
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.50

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 10.90
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 168.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 450

Rack travel in mm : 5.30
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 22.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 450
guide sleeve
travel mm : 2.71
Tolerance mm : \pm 0.20

Rated speed rpm : 1164
guide sleeve
travel mm : 7.81
Tolerance mm : \pm 0.15

Rated speed rpm : 856
guide sleeve
travel mm : 5.85
Tolerance mm : \pm 0.25

Rated speed rpm : 580
guide sleeve
travel mm : 3.81
Tolerance mm : \pm 0.25

Rated speed rpm : 1550
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1400
Rack travel in mm : 8.40
Tolerance mm : \pm 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 900
Del. quantity
cm³/1000 strokes : 168.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 121.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 9.90
Rated speed rpm : 1150
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1270
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1550

LOW IDLE

control lever
position degree : 70.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 450
rack travel mm : 5.30
Tolerance mm : \pm 0.10

Rated speed rpm : 350
CRT mm min. : $>$ 6.80

Rated speed rpm : 430

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 10.90
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 10.95
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 700
Pressure hPa : 900
rack travel mm : 10.90
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 700
rack travel mm : 10.20
Tolerance mm : \pm 0.20

Rated speed rpm : 700
Pressure hPa : 400
rack travel mm : 10.65
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900

Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 170.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 154.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 9.90
Rated speed rpm : 1150
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 110.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 450
Del. quantity
cm³/1000 strokes : 22.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.07.96
Test oil : ISO 4113
Combination No. : 0 402 746 610
Injection pump
Pump designation : PES6P120A720RS7409
EP type number : 0 412 726 956
Governor
Governor design. : RQV450...1050PA1277
Governor no. : 0 421 814 173

Cust. part No. :

Customer-spec. information
Customer : IVECO-FRANCE
Motor : 8465.41.016
Power KW : 186.0

TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 076

Inlet press. bar : 2.5

Overflow quantity
min. l/h : 180
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.15
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.50

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 11.55
Tolerance mm : ± 0.05

Del. quantity	
cm3/1000 strokes	: 184.0
<hr/>	
Tolerance	
cm3/1000 strokes	: +- 1.0
<hr/>	
Check tolerance	
cm3/1000S.	: +- 4.0
<hr/>	
Spreed	
Tolerance	
cm3/1000 strokes	: 5.0
<hr/>	
Check tolerance	
cm3/1000S.	: 9.0
<hr/>	
Rated speed rpm	: 450
<hr/>	
Rack travel in mm	: 5.20
Tolerance mm	: +- 0.10
Del. quantity	
cm3/1000 strokes	: 22.0
Tolerance	
cm3/1000 strokes	: +- 3.0
Check tolerance	
cm3/1000S.	: +- 6.0
Spreed	
Tolerance	
cm3/1000 strokes	: 8.0
Check tolerance	
cm3/1000S.	: 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 450
guide sleeve	
travel mm	: 2.71
Tolerance mm	: +- 0.20
<hr/>	
Rated speed rpm	: 1110
guide sleeve	
travel mm	: 7.40
Tolerance mm	: +- 0.10
<hr/>	
Rated speed rpm	: 836
guide sleeve	
travel mm	: 5.75
Tolerance mm	: +- 0.25
<hr/>	
Rated speed rpm	: 580
guide sleeve	
travel mm	: 3.81
Tolerance mm	: +- 0.25

G02

Rated speed rpm	: 1550
guide sleeve	
travel mm	: 11.50
Tolerance mm	: +- 0.50

GUIDE SLEEVE POSITION

Rated speed rpm	: 1375
Rack travel in mm	: 10.00
Tolerance mm	: +- 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1050
Aneroid pressure	
hPa	: 900
Del. quantity	
cm3/1000 strokes	: 184.0
Tolerance	
cm3/1000 strokes	: +- 1.0
Check tolerance	
cm3/1000S.	: +- 4.0
Spreed	
Tolerance	
cm3/1000 strokes	: 5.0
Check tolerance	
cm3/1000S.	: 9.0

CONTROL LEVER

control lever	
position degree	: 118.0
tolerance degree	: +- 4.0

RATED SPEED

rack travel mm	: 10.50
Rated speed rpm	: 1095
Tolerance 1/min	: +- 5
<hr/>	
rack travel mm	: 4.00
Rated speed rpm	: 1240
Tolerance 1/min	: +- 15
<hr/>	
rack travel mm	: 0.50
Tolerance mm	: +- 0.50
Rated speed rpm	: 1550

LOW IDLE

control lever
position degree : 70.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 450
rack travel mm : 5.20
Tolerance mm : \pm 0.10

Rated speed rpm : 350
CRT mm min. : $>$ 6.70

Rated speed rpm : 440

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 11.55
Tolerance mm : \pm 0.05

Rated speed rpm : 600
rack travel mm : 11.60
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 900
rack travel mm : 11.55
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 600
rack travel mm : 10.85
Tolerance mm : \pm 0.20

Rated speed rpm : 600

Pressure hPa : 360
rack travel mm : 11.30
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900

G03

Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 203.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 178.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 10.50
Rated speed rpm : 1095
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 120.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 450
Del. quantity
cm³/1000 strokes : 22.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 04.07.96

Test oil : ISO 4113

Combination No. : 0 402 796 816

Injection pump

Pump designation : PES6P120A720/3LS7396

EP type number : 0 412 726 948

Governor

Governer design. : RE30

Governer no. : 0 421 890 035

Cust. part No. : 51.11103-7485

Customer-spec. information

Customer : MAN

Motor : D 2866 LF 10

Power KW : 309.0

TEST BENCH REQUIREMENTS

Inlet Line : 4.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0

Tolerance bar : ± 0.1

Test nozzle holde assembly

: 1 688 901 105

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

REMARKS

Pump-specific values in Section (B) must be observed!

(A) INJECTION PUMP SETTINGS

No basic setting.

Setting of constant delivery under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 4.85

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 13.00

Tolerance mm : ± 0.50

Firing order : 6- 2- 4- 1- 5-
: 3

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery blocking

Tolerance : ± 0.10

Check

tolerance °NW : ± 0.75

Barrel no. : 6

(B) POSITIONER TESTING

Warm-up time: 3 minutes at
n=600 min⁻¹, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min-1: 0

Setting point
(P, R and H pump)

Uact V : 3.100
CRT mm : 13.00
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(P, R and H pump)

Uact V : 1.700
CRT mm : 6.15
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Setting point
(M pump)

Uact V : 3.100
CRT mm : 12.50
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(M pump)

Uact V : 1.700
CRT mm : 5.50
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Stop position

Uact V : Value with
deenergised adjusting magnet
and control rod in
stop position.

CRT mm : 0.75
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR
(ALL P and R pumps not
H and M pumps)

Test with control rod
in stop position

Engine speed min-1: 60
Amplitude V : 1.4
Tolerance V : +/- 0.6
Check
tolerance V : +/- 1.20

Engine speed min-1: 600
Difference
Amplitude to
Amplitude V : max.1.4

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 750
Uact V : 3.100
Del. quantity
cm3/1000 strokes : 285.0
Tolerance
cm3/1000 strokes : +/- 1.0
Check tolerance
cm3/1000S. : +/- 4.0
Spreed
Tolerance
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 9.0

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 1000
Uact V : 3.120
Del. quantity
cm3/1000 strokes : 267.0
Tolerance
cm3/1000 strokes : +/- 4.0
Check tolerance
cm3/1000S. : +/- 6.0

Rated speed rpm : 750
Uact V : 1.470
Del. quantity
cm3/1000 strokes : 73.0
Tolerance
cm3/1000 strokes : +/- 5.0
Check tolerance
cm3/1000S. : +/- 9.0
Spreed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

Rated speed rpm : 500

Uact V : 1.950
Del. quantity
cm3/1000 strokes : 118.0
Tolerance
cm3/1000 strokes : \pm 5.0
Check tolerance
cm3/1000s. : \pm 9.0

TEST POINT L1

Rated speed rpm : 325
Uact V : 1.470
Tolerance Volt : \pm 0.060
Check tolerance
Volt : \pm 0.080
Del. quantity
cm3/1000 strokes : 30.0
Tolerance
cm3/1000 strokes : \pm 3.0
Spreed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000s. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 05.07.96
Test oil : ISO 4113

Combination No. : 0 402 846 067

Injection pump
Pump designation : PE6P120A32ORS8015
EP type number : 0 412 826 016

Governor
Governor design. : RQV300...1050PA1225
Governor no. : 0 421 814 151

Cust. part No. : 11031773
: -P03 v.05/96

Customer-spec. information
Customer : VCE
Motor : TD122KAE
Power KW : 243.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 138
Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

G07

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 11.00
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 9.30
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 236.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Speed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 11.0

Rated speed rpm : 325

Rack travel in mm : 3.80
Tolerance mm : + 0.30

Del. quantity
cm³/1000 strokes : 23.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
guide sleeve
travel mm : 2.09
Tolerance mm : + 0.25

Rated speed rpm : 1095
guide sleeve
travel mm : 7.90
Tolerance mm : + 0.25

Rated speed rpm : 1028
guide sleeve
travel mm : 6.85
Tolerance mm : + 0.25

Rated speed rpm : 387
guide sleeve
travel mm : 2.96
Tolerance mm : + 0.25

Rated speed rpm : 437

guide sleeve
travel mm : 3.59
Tolerance mm : + 0.25

Rated speed rpm : 520
guide sleeve
travel mm : 4.67
Tolerance mm : + 0.25

Rated speed rpm : 1310
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1190

Rack travel in mm : 9.50
Tolerance mm : + 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 236.0
Tolerance

cm³/1000 strokes : + 1.0
Check tolerance

cm³/1000S. : + 4.0
Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 11.0

CONTROL LEVER

control lever
position degree : 61.0
tolerance degree : + 4.0

control lever
position degree : 125.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 8.30
Rated speed rpm : 1120
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1180

Tolerance 1/min : \pm 15
rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1265

LOW IDLE

control lever
position degree : 74.0
tolerance degree : \pm 4.0

control lever
position degree : 10.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 325
rack travel mm : 3.80
Tolerance mm : \pm 0.30

Rated speed rpm : 225

CRT mm min. : $>$ 5.40

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 9.30
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 9.30
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 7.80
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 520

rack travel mm : 1.30
Tolerance mm : \pm 0.20

Pressure hPa : 290
rack travel mm : 0.25
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 188.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 4.0

BREAKAWAY

Rack travel in mm : 8.30
Rated speed rpm : 1120
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000s. : \pm 19.0

LOW IDLE

Rated speed rpm : 325
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000s. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.07.96
Test oil : ISO 4113

Combination No. : 0 402 946 012

Injection pump
Pump designation : PES6P120A320RS8031
EP type number : 0 412 926 022

Governor
Governor design. : RQV300...1000PA1181K
Governor no. : 0 421 815 975

Cust. part No. : CCEP 5145A 66-234

Customer-spec. information

Customer : RENAULT V.I.
Motor : MIDR 063540 P 41
Power KW : 300.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.65
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 11.00
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

°NW after s.o.d. : -0.17
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

Beginning of delivery differende

betw. rack trav.
mm : 21.00
and maximum rack
travel : 19.50
Difference ° CS : 2.50

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 13.30
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 360.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325

Rack travel in mm : -7.80
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 38.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 6.0

Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.47
Tolerance mm : \pm 0.25

Rated speed rpm : 1082
guide sleeve
travel mm : 9.30
Tolerance mm : \pm 0.25

Rated speed rpm : 777
guide sleeve
travel mm : 6.08

Tolerance mm : \pm 0.25

Rated speed rpm : 383
guide sleeve
travel mm : 2.42
Tolerance mm : \pm 0.25

Rated speed rpm : 433
guide sleeve
travel mm : 2.89
Tolerance mm : \pm 0.25

Rated speed rpm : 530
guide sleeve
travel mm : 3.71
Tolerance mm : \pm 0.25

Rated speed rpm : 1350
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1220

Rack travel in mm : 12.00
Tolerance mm : \pm 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 1400
Del. quantity
cm³/1000 strokes : 360.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 295.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : -1.00
Rated speed rpm : 1105

Tolerance 1/min : \pm 5
 rack travel mm : -9.30
 Rated speed rpm : 1210
 Tolerance 1/min : \pm 15

 rack travel mm : -12.80
 Tolerance mm : \pm 0.50
 Rated speed rpm : 1300

LOW IDLE

control lever
 position degree : 253.0
 tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 325
 rack travel mm : -7.80
 Tolerance mm : \pm 0.10

 Rated speed rpm : 200

 CRT mm max. : $<$ -6.00

 Rated speed rpm : 360

TORQUE CONTROL

Rated speed rpm : 1000

 Rated speed rpm : 600
 rack travel mm : -0.55
 Tolerance mm : \pm 0.10

 Rated speed rpm : 800
 rack travel mm : -0.35
 Tolerance mm : \pm 0.20

 Rated speed rpm : 350
 rack travel mm : -1.80
 Tolerance mm : \pm 0.25

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1000
 Pressure hPa : 1400
 Tolerance mm : \pm 0.10

MEASUREMENT

Pressure hPa : -
 Rated speed rpm : 1000
 rack travel mm : -5.50
 Tolerance mm : \pm 0.20

Rated speed rpm : 1000

Pressure hPa : 280
 rack travel mm : -4.50
 Tolerance mm : \pm 0.20

Pressure hPa : 560
 rack travel mm : -3.00
 Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 175
 Rated speed rpm : $<$ 240

Check
 speed 1/min : $>$ 155
 Check
 speed 1/min : $<$ 260

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
 hPa : 1400
 Rated speed rpm : 600
 Del. quantity
 cm³/1000 strokes : 390.0
 Tolerance
 cm³/1000 strokes : \pm 3.0
 Check tolerance
 cm³/1000S. : \pm 6.0

Aneroid pressure
 hPa : -
 Rated speed rpm : 500
 Del. quantity
 cm³/1000 strokes : 201.0
 Tolerance
 cm³/1000 strokes : \pm 1.0
 Check tolerance
 cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : -1.00
 Rated speed rpm : 1105
 Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 190.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000s. : \pm 19.0

LOW IDLE

Rated speed rpm : 325
Del. quantity
cm³/1000 strokes : 38.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.07.96
Test oil : ISO 4113
Combination No. : 9 400 083 458
Injection pump
Pump designation : PES6A100D320/3RS2691
: -2
EP type number : 9 410 230 028
Governor
Governor design. : RQV350...1100AB1218
: -1R
Governor no. : 9 420 080 302
Cust. part No. : 3354617

Customer-spec. information
Customer : CUMMINS
Motor : 6 CT
Power KW : 156.6

TEST BENCH REQUIREMENTS

Inlet line : 3.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 014

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300

Start of delivery blocking

*NW after s.o.d. : 10.00
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.23
Barrel no. : 1

Beginning of delivery difference

and maximum rack
travel : 10.50
Tolerance mm : ± 1.50
Difference °CS : 3.50

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.65
Tolerance mm : + 0.05

Del. quantity
cm3/1000 strokes : 118.0

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 3.0

Spreed
Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 8.0

Rated speed rpm : 350

Rack travel in mm : 5.90
Tolerance mm : + 0.10

Del. quantity
cm3/1000 strokes : 15.0

Tolerance
cm3/1000 strokes : + 2.0

Check tolerance
cm3/1000S. : + 4.5

Spreed
Tolerance

cm3/1000 strokes : 5.5

Check tolerance
cm3/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1150
guide sleeve
travel mm : 7.00
Tolerance mm : + 0.10

Rated speed rpm : 1400
guide sleeve
travel mm : 8.95
Tolerance mm : + 0.25

Rated speed rpm : 350
guide sleeve
travel mm : 1.65
Tolerance mm : + 0.25

Rated speed rpm : 650

guide sleeve
travel mm : 4.45
Tolerance mm : + 0.25

GUIDE SLEEVE POSITION

Rated speed rpm : 1315

Rack travel in mm : 16.50
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure

hPa : 800

Del. quantity
cm3/1000 strokes : 118.0

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 3.0

Spreed
Tolerance

cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 56.0
tolerance degree : + 4.0

control lever
position degree : 111.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.60
Rated speed rpm : 1160
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1355
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1500

LOW IDLE

control lever
position degree : 71.0
tolerance degree : \pm 4.0

control lever
position degree : 16.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 5.90
Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : $>$ 9.00

Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 12.65
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 13.65
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 13.40
Tolerance mm : \pm 0.10

Rated speed rpm : 950
rack travel mm : 12.95
Tolerance mm : \pm 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 800
rack travel mm : 13.65
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500

Rated speed rpm : 500

Pressure hPa : 500

rack travel mm : 0.40
Tolerance mm : \pm 0.10

Pressure hPa : 600
rack travel mm : 1.35
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 270

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 800
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 133.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure
hPa : 800
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 130.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 94.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 11.60
Rated speed rpm : 1160
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 170.0
Tolerance
cm³/1000 strokes : \pm 8.0
Check tolerance
cm³/1000S. : \pm 11.0

LOW IDLE

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 15.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.09.89
Test oil : ISO 4113

Combination No. : 0 400 464 127

Injection pump
Pump designation : PES4A75D410/3RS1255
EP type number : 0 410 474 966

Governor
Governor design. : RS325/1650A0C2087L
Governor no. : 0 420 220 003

Cust. part No. :

Customer-spec. information
Customer : KHD
Motor : F4L912

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1650

Rack travel in mm : 9.95
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 51.5

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 2.0

Spreed
Tolerance
cm³/1000 strokes : 2.0

Check tolerance
cm³/1000S. : 3.5

Rated speed rpm : 325

Rack travel in mm : 6.00
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 19.5
Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : + 3.5
Spreed
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 3.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800
Rack travel in mm : 0.50
Tolerance mm : + 0.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1500
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 51.5
Tolerance
cm³/1000 strokes : + 0.5
Check tolerance
cm³/1000S. : + 2.0
Spreed
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 3.5

CONTROL LEVER

control lever
position degree : 98.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 8.90
Rated speed rpm : 1695
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1755
Tolerance 1/min : + 15

rack travel mm : 0.85
Tolerance mm : + 0.55
Rated speed rpm : 1900

G20

LOW IDLE

control lever
position degree : 67.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 325
rack travel mm : 6.00
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 470
Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.50

Rated speed rpm : 600

CRT mm max. : < 1.80

TORQUE CONTROL

Rated speed rpm : 1650
rack travel mm : 9.95
Tolerance mm : + 0.05

Rated speed rpm : 500
rack travel mm : 10.00
Tolerance mm : + 0.10

BREAKAWAY

Rack travel in mm : 8.90
Rated speed rpm : 1695
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 115.0
Tolerance
cm³/1000 strokes : + 5.0

Check tolerance
cm³/1000S. : +- 8.0

LOW IDLE

Rated speed rpm : 325
Del. quantity
cm³/1000 strokes : 19.5
Tolerance
cm³/1000 strokes : +- 2.0
Check tolerance
cm³/1000S. : +- 3.5
Spreed
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 3.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.07.96
Test oil : ISO 4113

Combination No. : 9 400 030 731

Injection pump
Pump designation : PES6A95D320/3RS2881
EP type number : 9 410 037 215

Governor
Governor design. : RSV475...1100A0C843R
Governor no. : 9 420 034 709

Cust. part No. : 3929406

Customer-spec. information
Customer : CDC
Motor : 6BT
Power KW : 100.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

*NW after s.o.d. : 7.00
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.25
Tolerance mm : ± 0.05

Del. quantity
cm3/1000 strokes : 94.0

Tolerance
cm3/1000 strokes : \pm 1.0

Check tolerance
cm3/1000S. : \pm 3.0

Spread
Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 6.0

Rated speed rpm : 500

Rack travel in mm : 5.10
Tolerance mm : \pm 0.10

Del. quantity
cm3/1000 strokes : 18.5

Tolerance
cm3/1000 strokes : \pm 2.0

Check tolerance
cm3/1000S. : \pm 4.5

Spread
Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 900

Del. quantity
cm3/1000 strokes : 94.0

Tolerance
cm3/1000 strokes : \pm 1.0

Check tolerance
cm3/1000S. : \pm 3.0

Spread
Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 107.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 10.20
Rated speed rpm : 1165
Tolerance 1/min : \pm 5

rack travel mm : 5.40
Rated speed rpm : 1230
Tolerance 1/min : \pm 5

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1300

rack travel mm : 5.40
Rated speed rpm : 1230

LOW IDLE

control lever
position degree : 88.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 500
rack travel mm : 4.60

Testing:

Rated speed rpm : 500
rack travel mm : 5.10
Tolerance mm : \pm 0.10

Rated speed rpm : 100
CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 11.25
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 12.00
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 800
Pressure hPa : 900

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 800
rack travel mm : 11.30
Tolerance mm : \pm 0.20

Rated speed rpm : 800

Pressure hPa : 650
rack travel mm : 11.70
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 107.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 97.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 10.20
Rated speed rpm : 1165
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 120.5
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 15.0

LOW IDLE

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 18.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.07.96
Test oil : ISO 4113

Combination No. : 9 400 030 732

Injection pump
Pump designation : PES6A95D320/3RS2881
EP type number : 9 410 037 215

Governor
Governor design. : RSV475...1250AOC845R
Governor no. : 9 420 034 711

Cust. part No. : 3929407

Customer-spec. information
Customer : CDC
Motor : 6BT
Power KW : 97.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 7.00
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 10.95
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 91.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.5

Rated speed rpm : 475

Rack travel in mm : 5.10
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 18.5
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5

Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 5.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 91.0
Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 6.5

CONTROL LEVER

control lever
position degree : 117.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 9.90
Rated speed rpm : 1315
Tolerance 1/min : ± 5

rack travel mm : 5.50
Rated speed rpm : 1370
Tolerance 1/min : ± 5

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1500

rack travel mm : 5.50
Rated speed rpm : 1370

LOW IDLE

control lever
position degree : 91.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 475
rack travel mm : 4.60

Testing:

Rated speed rpm : 475
rack travel mm : 5.10
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 10.95
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 11.30
Tolerance mm : \pm 0.10

Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.0

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 97.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 9.90
Rated speed rpm : 1315
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 120.5
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 15.0

LOW IDLE

Rated speed rpm : 475
Del. quantity
cm³/1000 strokes : 18.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spread

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 09.07.96
Test oil : ISO 4113

Combination No. : 9 400 030 739

Injection pump
Pump designation : PES6A95D320/3RS2881
EP type number : 9 410 037 215

Governor
Governor design. : RSV475...1250A0C852R
Governor no. : 9 420 034 718

Cust. part No. : 3929403

Customer-spec. information

Customer : CDC
Motor : 6BT
Power KW : 114.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

*NW after s.o.d. : 7.00
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 11.75
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 102.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 3.0

Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 475

Rack travel in mm : 5.10
Tolerance mm : +- 0.10

Del. quantity
cm³/1000 strokes : 21.5
Tolerance
cm³/1000 strokes : +- 2.0
Check tolerance
cm³/1000S. : +- 4.5

Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : +- 0.20

governor spring
pre-tension
click setting x : 5.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
Aneroid pressure
hPa : 900
Del. quantity
cm³/1000 strokes : 102.0
Tolerance
cm³/1000 strokes : +- 1.0

H01

Check tolerance
cm³/1000S. : +- 3.0
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 116.0
tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 10.70
Rated speed rpm : 1320
Tolerance 1/min : +- 5

rack travel mm : 7.50
Rated speed rpm : 1365
Tolerance 1/min : +- 5

rack travel mm : 0.85
Tolerance mm : +- 0.55
Rated speed rpm : 1450

rack travel mm : 7.50
Rated speed rpm : 1365

LOW IDLE

control lever
position degree : 91.0
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 475
rack travel mm : 4.60

Testing:

Rated speed rpm : 475
rack travel mm : 5.10
Tolerance mm : +- 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 11.75
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 12.10
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 800
Pressure hPa : 900

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 800
rack travel mm : 11.30
Tolerance mm : \pm 0.20

Rated speed rpm : 800

Pressure hPa : 650
rack travel mm : 11.70
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 108.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 97.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 10.70
Rated speed rpm : 1320
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 120.5
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 15.0

LOW IDLE

Rated speed rpm : 475
Del. quantity
cm³/1000 strokes : 21.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.07.96
Test oil : ISO 4113

Combination No. : 9 400 030 740

Injection pump
Pump designation : PES6A95D320/3RS2881
EP type number : 9 410 037 215

Governor
Governor design. : RSV425...1200A0C853R
Governor no. : 9 420 034 719

Cust. part No. : 3929410

Customer-spec. information
Customer : CDC
Motor : 6BT
Power KW : 100.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 7.00
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 11.05
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 93.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 425

Rack travel in mm : 5.10
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 18.5
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5

Spread
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 4.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1200
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 93.0
Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spread
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 113.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 10.00
Rated speed rpm : 1275
Tolerance 1/min : ± 5

rack travel mm : 6.10
Rated speed rpm : 1335
Tolerance 1/min : ± 5

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1425

rack travel mm : 6.10
Rated speed rpm : 1335

LOW IDLE

control lever
position degree : 80.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 425
rack travel mm : 4.60

Testing:

Rated speed rpm : 425
rack travel mm : 5.10
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1200
rack travel mm : 11.05
Tolerance mm : \pm 0.05

Rated speed rpm : 800

BREAKAWAY

Rack travel in mm : 10.00
Rated speed rpm : 1275
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 120.5
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 15.0

LOW IDLE

Rated speed rpm : 425
Del. quantity
cm³/1000 strokes : 18.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.07.96
Test oil : ISO 4113

Combination No. : 0 402 046 855

Injection pump
Pump designation : PE6P110A320RS3329
EP type number : 0 412 016 743

Governor
Governor design. : RQV325...1300PA1119
Governor no. : 0 421 814 083

Cust. part No. : 1284418/4

Customer-spec. information
Customer : DAF
Motor : NS156M
Power KW : 156.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 144.0

Tolerance
cm3/1000 strokes : +- 1.0

Check tolerance
cm3/1000S. : +- 4.0

Spreed
Tolerance
cm3/1000 strokes : 4.0

Check tolerance
cm3/1000S. : 7.5

Rated speed rpm : 325

Rack travel in mm : 4.50
Tolerance mm : +- 0.10

Del. quantity
cm3/1000 strokes : 26.0

Tolerance
cm3/1000 strokes : +- 2.5

Check tolerance
cm3/1000S. : +- 5.0

Spreed
Tolerance
cm3/1000 strokes : 12.0

Check tolerance
cm3/1000S. : 15.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
guide sleeve
travel mm : 1.33
Tolerance mm : +- 0.15

Rated speed rpm : 1353
guide sleeve
travel mm : 8.29
Tolerance mm : +- 0.20

Rated speed rpm : 900
guide sleeve
travel mm : 4.92
Tolerance mm : +- 0.25

Rated speed rpm : 405
guide sleeve
travel mm : 2.07
Tolerance mm : +- 0.25

Rated speed rpm : 455
guide sleeve
travel mm : 2.52

H07

Tolerance mm : +- 0.25

Rated speed rpm : 530
guide sleeve
travel mm : 2.93
Tolerance mm : +- 0.25

Rated speed rpm : 1640
guide sleeve
travel mm : 11.50
Tolerance mm : +- 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1450

Rack travel in mm : 10.80
Tolerance mm : +- 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000

Del. quantity
cm3/1000 strokes : 144.0

Tolerance
cm3/1000 strokes : +- 1.0

Check tolerance
cm3/1000S. : +- 4.0

Spreed
Tolerance
cm3/1000 strokes : 4.0

Check tolerance
cm3/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 122.0
tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 10.85
Rated speed rpm : 1342
Tolerance 1/min : +- 5

rack travel mm : 4.00
Rated speed rpm : 1460
Tolerance 1/min : +- 15

rack travel mm : 0.50
Tolerance mm : +- 0.50
Rated speed rpm : 1600

LOW IDLE

control lever
position degree : 83.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 325
rack travel mm : 4.50
Tolerance mm : \pm 0.10

Rated speed rpm : 225
CRT mm min. : $>$ 6.00
Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 11.85
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 11.85
Tolerance mm : \pm 0.05

Rated speed rpm : 1300
rack travel mm : 11.85
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 1000
rack travel mm : 11.85
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 600
rack travel mm : 7.35
Tolerance mm : \pm 0.20

Rated speed rpm : 600

Pressure hPa : 370
rack travel mm : 10.75
Tolerance mm : \pm 0.05

H08

Pressure hPa : 200
rack travel mm : 8.40
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 145.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 5.0

Aneroid pressure
hPa : -
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 94.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 3.5

BREAKAWAY

Rack travel in mm : 10.85
Rated speed rpm : 1342
Tolerance 1/min : \pm 5

LOW IDLE

Rated speed rpm : 325
Del. quantity
cm³/1000 strokes : 26.0
Tolerance
cm³/1000 strokes : \pm 2.5
Check tolerance
cm³/1000s. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 12.0
Check tolerance
cm³/1000s. : 15.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.07.96
Test oil : ISO 4113
Combination No. : 0 402 046 856
Injection pump
Pump designation : PE6P110A320RS3329Z
EP type number : 0 412 016 744
Governor
Governor design. : RQV325...1300PA1119
Governor no. : 0 421 814 083

Cust. part No. : 1284417/5

Customer-spec. information
Customer : DAF
Motor : NS133M
Power KW : 133.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

H10

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 146.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rated speed rpm : 325

Rack travel in mm : 4.50
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 26.0

Tolerance
cm³/1000 strokes : + 2.5

Check tolerance
cm³/1000S. : + 5.0

Spread
Tolerance
cm³/1000 strokes : 12.0

Check tolerance
cm³/1000S. : 15.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
guide sleeve
travel mm : 1.33
Tolerance mm : + 0.15

Rated speed rpm : 1353
guide sleeve
travel mm : 8.29
Tolerance mm : + 0.20

Rated speed rpm : 900
guide sleeve
travel mm : 4.92
Tolerance mm : + 0.25

Rated speed rpm : 405
guide sleeve
travel mm : 2.07
Tolerance mm : + 0.25

Rated speed rpm : 455
guide sleeve
travel mm : 2.52

Tolerance mm : + 0.25

Rated speed rpm : 530
guide sleeve
travel mm : 2.93
Tolerance mm : + 0.25

Rated speed rpm : 1640
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1450

Rack travel in mm : 10.80
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 146.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 122.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.85
Rated speed rpm : 1342
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1460
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1600

LOW IDLE

control lever
position degree : 83.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 325
rack travel mm : 4.50
Tolerance mm : \pm 0.10

Rated speed rpm : 225
CRT mm min. : $>$ 6.00
Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 11.85
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 11.85
Tolerance mm : \pm 0.05

Rated speed rpm : 1300
rack travel mm : 11.85
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 1000
rack travel mm : 11.85
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 600
rack travel mm : 6.50
Tolerance mm : \pm 0.20

Rated speed rpm : 600

Pressure hPa : 310
rack travel mm : 10.55
Tolerance mm : \pm 0.05

H12

Pressure hPa : 130
rack travel mm : 7.85
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 145.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

Aneroid pressure
hPa : -
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 83.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.5

BREAKAWAY

Rack travel in mm : 10.85
Rated speed rpm : 1342
Tolerance 1/min : \pm 5

LOW IDLE

Rated speed rpm : 325
Del. quantity
cm³/1000 strokes : 26.0
Tolerance
cm³/1000 strokes : \pm 2.5
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 12.0
Check tolerance
cm³/1000S. : 15.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.07.96
Test oil : ISO 4113

Combination No. : 0 402 046 861

Injection pump
Pump designation : PE6P110A320RS3329
EP type number : 0 412 016 743

Governor
Governor design. : RQ325/1300PA1150
Governor no. : 0 421 801 716

Cust. part No. : 1284420/4

Customer-spec. information
Customer : DAF
Motor : NS156M
Power KW : 156.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 144.0

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 4.0

Spreed
Tolerance
cm3/1000 strokes : 4.0

Check tolerance
cm3/1000S. : 7.5

Rated speed rpm : 325

Rack travel in mm : 4.50
Tolerance mm : + 0.10

Del. quantity
cm3/1000 strokes : 26.0

Tolerance
cm3/1000 strokes : + 2.5

Check tolerance
cm3/1000S. : + 5.0

Spreed
Tolerance
cm3/1000 strokes : 12.0

Check tolerance
cm3/1000S. : 15.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
guide sleeve
travel mm : 1.99
Tolerance mm : + 0.10

Rated speed rpm : 1351
guide sleeve
travel mm : 6.37
Tolerance mm : + 0.10

Rated speed rpm : 1300
guide sleeve
travel mm : 6.00
Tolerance mm : + 0.10

Rated speed rpm : 427
guide sleeve
travel mm : 3.54
Tolerance mm : + 0.10

Rated speed rpm : 590

guide sleeve
travel mm : 6.00
Tolerance mm : + 0.10

Rated speed rpm : 1570
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 650

Rack travel in mm : 20.00
Tolerance mm : + 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000

Del. quantity
cm3/1000 strokes : 144.0

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 4.0

Spreed
Tolerance
cm3/1000 strokes : 4.0

Check tolerance
cm3/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 93.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.85
Rated speed rpm : 1345
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1450
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1600

LOW IDLE

control lever
position degree : 72.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 325
rack travel mm : 4.50
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 415

Rated speed rpm : 225

CRT mm min. : $>$ 5.90

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 11.85
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 11.85
Tolerance mm : \pm 0.05

Rated speed rpm : 1300
rack travel mm : 11.85
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 1000
rack travel mm : 11.85
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 600
rack travel mm : 7.35
Tolerance mm : \pm 0.20

Rated speed rpm : 600

Pressure hPa : 370
rack travel mm : 10.75
Tolerance mm : \pm 0.05

Pressure hPa : 200

rack travel mm : 8.40
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 145.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

Aneroid pressure
hPa : -
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 94.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.5

BREAKAWAY

Rack travel in mm : 10.85
Rated speed rpm : 1345
Tolerance 1/min : \pm 5

LOW IDLE

Rated speed rpm : 325
Del. quantity
cm³/1000 strokes : 26.0
Tolerance
cm³/1000 strokes : \pm 2.5
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 12.0
Check tolerance
cm³/1000S. : 15.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.07.96
Test oil : ISO 4113

Combination No. : 0 402 046 873

Injection pump
Pump designation : PES6P110A320RS3329
EP type number : 0 412 016 743

Governor
Governor design. : RQV325...1250PA1251
Governor no. : 0 421 814 164

Cust. part No. : 1305227/0

Customer-spec. information
Customer : DAF
Motor : NS177M
Power KW : 177.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5
Tolerance bar : +- 0.1

Tolerance l/h : +- 10.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : +- 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : +- 1.0

Prestroke mm : 5.25
Tolerance mm : +- 0.05
Check
tolerance mm : +- 0.10

Rack travel in mm : 20.50
Tolerance mm : +- 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : +- 0.30
Check
tolerance °NW : +- 0.50

Start of delivery mark

Tolerance : +- 0.10
Check
tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.25
Tolerance mm : +- 0.05

Del. quantity
cm³/1000 strokes : 149.5

<hr/>	
Tolerance	
cm3/1000 strokes	: + 1.0
<hr/>	
Check tolerance	
cm3/1000S.	: + 4.0
<hr/>	
Spreed	
Tolerance	
cm3/1000 strokes	: 4.0
<hr/>	
Check tolerance	
cm3/1000S.	: 7.5
<hr/>	
Rated speed rpm	: 325
<hr/>	
Rack travel in mm	: 4.40
Tolerance mm	: + 0.10
Del. quantity	
cm3/1000 strokes	: 26.0
Tolerance	
cm3/1000 strokes	: + 2.5
Check tolerance	
cm3/1000S.	: + 5.0
Spreed	
Tolerance	
cm3/1000 strokes	: 12.0
Check tolerance	
cm3/1000S.	: 15.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 325
guide sleeve	
travel mm	: 1.25
Tolerance mm	: + 0.20
<hr/>	
Rated speed rpm	: 1308
guide sleeve	
travel mm	: 10.40
Tolerance mm	: + 0.15
<hr/>	
Rated speed rpm	: 868
guide sleeve	
travel mm	: 5.45
Tolerance mm	: + 0.25
<hr/>	
Rated speed rpm	: 520
guide sleeve	
travel mm	: 3.02
Tolerance mm	: + 0.25
<hr/>	
Rated speed rpm	: 1510

guide sleeve	
travel mm	: 13.50
Tolerance mm	: + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm	: 1360
Rack travel in mm	: 11.25
Tolerance mm	: + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1000
Aneroid pressure	
hPa	: 1500
Del. quantity	
cm3/1000 strokes	: 149.5
Tolerance	
cm3/1000 strokes	: + 1.0
Check tolerance	
cm3/1000S.	: + 4.0
Spreed	
Tolerance	
cm3/1000 strokes	: 4.0
Check tolerance	
cm3/1000S.	: 7.5

CONTROL LEVER

control lever	
position degree	: 123.0
tolerance degree	: + 4.0

RATED SPEED

rack travel mm	: 11.25
Rated speed rpm	: 1290
Tolerance 1/min	: + 5
<hr/>	
rack travel mm	: 4.00
Rated speed rpm	: 1375
Tolerance 1/min	: + 15
<hr/>	
rack travel mm	: 0.50
Tolerance mm	: + 0.50
Rated speed rpm	: 1500

LOW IDLE

control lever	
position degree	: 76.0
tolerance degree	: + 4.0

Testing:

Rated speed rpm : 325
rack travel mm : 4.40
Tolerance mm : \pm 0.10

Rated speed rpm : 225
CRT mm min. : $>$ 5.90

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 12.25
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 12.25
Tolerance mm : \pm 0.10

Rated speed rpm : 1250
rack travel mm : 12.25
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 1500
rack travel mm : 12.25
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 600
rack travel mm : 6.80
Tolerance mm : \pm 0.20

Rated speed rpm : 600

Pressure hPa : 430
rack travel mm : 10.90
Tolerance mm : \pm 0.05

Pressure hPa : 220
rack travel mm : 7.85
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 153.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 92.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.5

BREAKAWAY

Rack travel in mm : 11.25
Rated speed rpm : 1290
Tolerance 1/min : \pm 5

LOW IDLE

Rated speed rpm : 325
Del. quantity
cm³/1000 strokes : 26.0
Tolerance
cm³/1000 strokes : \pm 2.5
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 12.0
Check tolerance
cm³/1000S. : 15.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.07.96
Test oil : ISO 4113

Combination No. : 0 402 046 875

Injection pump
Pump designation : PES6P110A320RS3329Z
EP type number : 0 412 016 744

Governor
Governor design. : RQV325...1250PA1251
Governor no. : 0 421 814 164

Cust. part No. : 1309376/0

Customer-spec. information

Customer : DAF
Motor : NS156M
Power KW : 156.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 160
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.85
Tolerance mm : ± 0.05

Del. quantity
cm3/1000 strokes : 144.0

Tolerance
cm3/1000 strokes : \pm 1.0

Check tolerance
cm3/1000S. : \pm 4.0

Spreed
Tolerance
cm3/1000 strokes : 4.0

Check tolerance
cm3/1000S. : 7.5

Rated speed rpm : 325

Rack travel in mm : 4.50
Tolerance mm : \pm 0.10

Del. quantity
cm3/1000 strokes : 26.0
Tolerance
cm3/1000 strokes : \pm 2.5
Check tolerance
cm3/1000S. : \pm 5.0

Spreed
Tolerance
cm3/1000 strokes : 12.0
Check tolerance
cm3/1000S. : 15.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
guide sleeve
travel mm : 1.25
Tolerance mm : \pm 0.20

Rated speed rpm : 1298
guide sleeve
travel mm : 10.25
Tolerance mm : \pm 0.15

Rated speed rpm : 863
guide sleeve
travel mm : 5.41
Tolerance mm : \pm 0.25

Rated speed rpm : 520
guide sleeve
travel mm : 3.02
Tolerance mm : \pm 0.25

Rated speed rpm : 1510
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1370
Rack travel in mm : 10.85
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 1500
Del. quantity
cm3/1000 strokes : 144.0
Tolerance
cm3/1000 strokes : \pm 1.0
Check tolerance
cm3/1000S. : \pm 4.0
Spreed
Tolerance
cm3/1000 strokes : 4.0
Check tolerance
cm3/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 123.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 10.85
Rated speed rpm : 1285
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1360
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1500

LOW IDLE

control lever
position degree : 76.0

tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 325
rack travel mm : 4.50
Tolerance mm : \pm 0.10

Rated speed rpm : 225

CRT mm min. : $>$ 6.00

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 11.85
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 11.85
Tolerance mm : \pm 0.10

Rated speed rpm : 1250
rack travel mm : 11.85
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 1500
rack travel mm : 11.85
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 600
rack travel mm : 7.35
Tolerance mm : \pm 0.20

Rated speed rpm : 600

Pressure hPa : 370
rack travel mm : 10.75
Tolerance mm : \pm 0.05

Pressure hPa : 200
rack travel mm : 8.40
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 145.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 94.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.5

BREAKAWAY

Rack travel in mm : 10.85
Rated speed rpm : 1285
Tolerance 1/min : \pm 5

LOW IDLE

Rated speed rpm : 325
Del. quantity
cm³/1000 strokes : 26.0
Tolerance
cm³/1000 strokes : \pm 2.5
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 12.0
Check tolerance
cm³/1000S. : 15.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.07.96

Test oil : ISO 4113

Combination No. : 0 402 046 876

Injection pump

Pump designation : PES6P110A320RS3329Y

EP type number : 0 412 016 756

Governor

Governer design. : RQV325...1250PA1251

Governer no. : 0 421 814 164

Cust. part No. : 1309375/0

Customer-spec. information

Customer : DAF

Motor : NS133M

Power KW : 133.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5

Tolerance bar : ± 0.1

Overflow quantity

min. l/h : 160

Tolerance l/h : ± 20.0

Test nozzle holde assembly

: 1 688 901 101

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 5.25

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 20.50

Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.30

Check

tolerance °NW : ± 0.50

Start of delivery mark

Tolerance : ± 0.10

Check

tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.85

Tolerance mm : ± 0.05

Del. quantity
cm3/1000 strokes : 146.0

Tolerance
cm3/1000 strokes : \pm 1.0

Check tolerance
cm3/1000S. : \pm 4.0

Spreed
Tolerance
cm3/1000 strokes : 4.0

Check tolerance
cm3/1000S. : 7.5

Rated speed rpm : 325

Rack travel in mm : 4.50
Tolerance mm : \pm 0.10

Del. quantity
cm3/1000 strokes : 26.0
Tolerance
cm3/1000 strokes : \pm 2.5
Check tolerance
cm3/1000S. : \pm 5.0

Spreed
Tolerance
cm3/1000 strokes : 12.0
Check tolerance
cm3/1000S. : 15.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
guide sleeve
travel mm : 1.25
Tolerance mm : \pm 0.20

Rated speed rpm : 1298
guide sleeve
travel mm : 10.25
Tolerance mm : \pm 0.15

Rated speed rpm : 863
guide sleeve
travel mm : 5.41
Tolerance mm : \pm 0.25

Rated speed rpm : 520
guide sleeve
travel mm : 3.02
Tolerance mm : \pm 0.25

Rated speed rpm : 1510
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1370
Rack travel in mm : 10.85
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 1500
Del. quantity
cm3/1000 strokes : 146.0
Tolerance
cm3/1000 strokes : \pm 1.0
Check tolerance
cm3/1000S. : \pm 4.0
Spreed
Tolerance
cm3/1000 strokes : 4.0
Check tolerance
cm3/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 123.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 10.85
Rated speed rpm : 1285
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1360
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1500

LOW IDLE

control lever
position degree : 76.0

tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 325
rack travel mm : 4.50
Tolerance mm : \pm 0.10

Rated speed rpm : 225
CRT mm min. : $>$ 6.00

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 11.85
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 11.85
Tolerance mm : \pm 0.10

Rated speed rpm : 1250
rack travel mm : 11.85
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 1500
rack travel mm : 11.85
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 600
rack travel mm : 6.50
Tolerance mm : \pm 0.20

Rated speed rpm : 600

Pressure hPa : 310
rack travel mm : 10.55
Tolerance mm : \pm 0.05

Pressure hPa : 130
rack travel mm : 7.85
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 147.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 83.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.5

BREAKAWAY

Rack travel in mm : 10.85
Rated speed rpm : 1285
Tolerance 1/min : \pm 5

LOW IDLE

Rated speed rpm : 325
Del. quantity
cm³/1000 strokes : 26.0
Tolerance
cm³/1000 strokes : \pm 2.5
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 12.0
Check tolerance
cm³/1000S. : 15.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.07.96
Test oil : ISO 4113

Combination No. : 0 402 076 798

Injection pump
Pump designation : PES6P120A720RS3371
EP type number : 0 412 026 791

Governor
Governor design. : RSV450...1000P5A637
: -1
Governor no. : 0 421 833 549

Cust. part No. :

Customer-spec. information
Customer : IVECO-FIAT
Motor : 8365.26.540
Power KW : 136.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 034

Inlet press. bar : 2.5

Overflow quantity
min. l/h : 230
Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 9.55
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 128.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000s. : ± 4.0

Spreed
Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

Rated speed rpm : 450

Rack travel in mm : 4.60
Tolerance mm : \pm 0.10

Del. quantity
cm3/1000 strokes : 20.0
Tolerance
cm3/1000 strokes : \pm 3.0
Check tolerance
cm3/1000S. : \pm 6.0

Spreed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 3.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 1200
Del. quantity
cm3/1000 strokes : 128.0
Tolerance
cm3/1000 strokes : \pm 1.0
Check tolerance
cm3/1000S. : \pm 4.0
Spreed
Tolerance
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 99.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 8.50
Rated speed rpm : 1070
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1110
Tolerance 1/min : \pm 15

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1400

rack travel mm : 4.00
Rated speed rpm : 1120

LOW IDLE

control lever
position degree : 75.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 450
rack travel mm : 4.10

Testing:

Rated speed rpm : 450
rack travel mm : 4.60
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 580
Tolerance 1/min : \pm 50

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 9.55
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 9.60
Tolerance mm : \pm 0.10

Rated speed rpm : 320
rack travel mm : 10.20
Tolerance mm : \pm 0.30

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 9.55
Tolerance mm : \pm 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 9.10
Tolerance mm : \pm 0.15

Rated speed rpm : 500

Pressure hPa : 425
rack travel mm : 9.35
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 122.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 88.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 8.50
Rated speed rpm : 1070

Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 9.10
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 90.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 450
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

Note remarks

Edition : 16.07.96
Test oil : ISO 4113

Injection pump
Pump designation : PE8P120A720LS7189
: -10
EP type number : 0 412 628 893

Governor
Governor design. : RQV200...950PA736-8
Governor no. : 0 421 813 815

Cust. part No. : 1303811

Customer : SCANIA
Motor : DSC14 10

Inlet Line : 4.1

Vibration
damper
(RoBo diaphragm) : 3.2

Test oil inlet		
temp. °C	:	40
Tolerance °C	:	± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5
Tolerance bar : \pm 0.1

Test nozzle holde
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Outside diameter : 6.0

```
x inside diameter :      2.0
x length mm       :      600
```

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values

Test pressure bar : 26.0
Tolerance bar : +- 1.0

```
Prestroke mm      :      5.05
Tolerance mm      :  +  0.05
Check
tolerance mm      :  +  0.10
```

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 2- 7- 3- 4
: - 5- 6- 8

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : + 0.30
Check
tolerance °NW : + 0.50

Rated speed rpm : 700

Rack travel in mm : 13.05
Tolerance mm : ± 0.05

Del. quantity
cm3/1000 strokes : 238.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm3/1000S. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 250

Rack travel in mm : 4.50
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 16.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Speed
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 1150

Rack travel in mm : 9.50
Tolerance mm : ± 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 238.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 60.0
tolerance degree : ± 4.0

control lever
position degree : 94.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 12.00
Rated speed rpm : 995
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1115
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 45.0
tolerance degree : ± 4.0

control lever
position degree : 11.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 250
rack travel mm : 4.50
Tolerance mm : ± 0.10

Rated speed rpm : 150

CRT mm min. : > 5.80

Rated speed rpm : 275

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 13.05
Tolerance mm : ± 0.05

Rated speed rpm : 950
rack travel mm : 13.05
Tolerance mm : ± 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 13.05
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.00
Tolerance mm : \pm 0.20

Rated speed rpm : 500

Pressure hPa : 525
rack travel mm : 11.75
Tolerance mm : \pm 0.05

Pressure hPa : 320
rack travel mm : 10.50
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 224.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 144.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 12.00

J04

Rated speed rpm : 995
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.00
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 250
Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.07.96
Test oil : ISO 4113
Combination No. : 0 402 736 857
Injection pump
Pump designation : PES6P110A120RS7263
EP type number : 0 412 716 808

Governor
Governor design. : RQV350...1250PA964
: -27K
Governor no. : 0 421 815 427

Cust. part No. : 3282462

Customer-spec. information
Customer : CUMMINS
Motor : 6BTAA
Power KW : 154.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.40
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery blocking

°NW after s.o.d. : 6.50
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 13.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 152.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000s. : + 4.0

Spreed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000s. : 9.0

Rated speed rpm : 350

Rack travel in mm : 5.00
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 26.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000s. : + 5.0

Spreed
Tolerance
cm³/1000 strokes : 7.0

Check tolerance
cm³/1000s. : 11.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 1440

Rack travel in mm : 9.00
Tolerance mm : + 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100

Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 152.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000s. : + 4.0

Spreed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000s. : 9.0

CONTROL LEVER

control lever
position degree : 63.0
tolerance degree : + 4.0

control lever
position degree : 121.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 13.50
Rated speed rpm : 1310
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1450
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1600

LOW IDLE

control lever
position degree : 72.0
tolerance degree : + 4.0

control lever
position degree : 17.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 5.00
Tolerance mm : + 0.10

Rated speed rpm : 250

CRT mm min. : > 6.50

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 13.85
Tolerance mm : + 0.05

Rated speed rpm : 750
rack travel mm : 12.40
Tolerance mm : \pm 0.10

Rated speed rpm : 1250
rack travel mm : 14.50
Tolerance mm : \pm 0.10

Rated speed rpm : 400
rack travel mm : 11.65
Tolerance mm : \pm 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1250
Pressure hPa : 1200
rack travel mm : 14.50
Tolerance mm : \pm 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1250
rack travel mm : 9.35
Tolerance mm : \pm 0.20

Rated speed rpm : 1250

Pressure hPa : 570
rack travel mm : 11.30
Tolerance mm : \pm 0.20

Pressure hPa : 775
rack travel mm : 13.15
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 270

Check
speed 1/min : > 80
Check
speed 1/min : < 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 750

Del. quantity
cm³/1000 strokes : 151.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 116.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 4.0

BREAKAWAY

Rack travel in mm : 13.50
Rated speed rpm : 1310
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 12.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000s. : \pm 24.0

LOW IDLE

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 26.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 7.0

Check tolerance
cm3/1000s. : 11.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.07.96
Test oil : ISO 4113
Combination No. : 0 402 746 603
Injection pump
Pump designation : PES6P120A320RS7359
EP type number : 0 412 726 925
Governor
Governor design. : RQ300/1050PA999-7
Governor no. : 0 421 801 799

Cust. part No. : CCEP 5153 66-224

Customer-spec. information
Customer : RENAULT V.I.
Motor : MIHR062045 A41
Power KW : 188.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.70
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.25
Tolerance mm : ± 0.75

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 12.30
Tolerance mm : ± 0.05
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 191.0

Tolerance
cm3/1000 strokes : +- 1.0

Check tolerance
cm3/1000S. : +- 4.0

Spread
Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : -5.90
Tolerance mm : +- 0.10

Del. quantity
cm3/1000 strokes : 37.0

Tolerance
cm3/1000 strokes : +- 2.0

Check tolerance
cm3/1000S. : +- 5.0

Spread
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275
guide sleeve
travel mm : 1.75
Tolerance mm : +- 0.20

Rated speed rpm : 1145
guide sleeve
travel mm : 6.55
Tolerance mm : +- 0.15

Rated speed rpm : 1050
guide sleeve
travel mm : 6.00
Tolerance mm : +- 0.10

Rated speed rpm : 594
guide sleeve
travel mm : 5.11
Tolerance mm : +- 0.10

Rated speed rpm : 720
guide sleeve
travel mm : 6.00

Tolerance mm : +- 0.10

Rated speed rpm : 1380
guide sleeve
travel mm : 11.50
Tolerance mm : +- 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 20.00
Tolerance mm : +- 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure
hPa : 1000

Del. quantity
cm3/1000 strokes : 191.0

Tolerance
cm3/1000 strokes : +- 1.0

Check tolerance
cm3/1000S. : +- 4.0

Spread
Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 276.0
tolerance degree : +- 4.0

RATED SPEED

rack travel mm : -1.00
Rated speed rpm : 1115
Tolerance 1/min : +- 15

rack travel mm : -8.30
Rated speed rpm : 1255
Tolerance 1/min : +- 5

rack travel mm : -11.80
Tolerance mm : +- 0.50
Rated speed rpm : 1375

LOW IDLE

control lever
position degree : 255.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 275
rack travel mm : -5.90
Tolerance mm : \pm 0.10

rack travel mm : -10.30
Rated speed rpm : 520
Tolerance 1/min : \pm 20

Rated speed rpm : 175
CRT mm min. : $>$ -4.00

TORQUE CONTROL

Rated speed rpm : 600
Tolerance mm : \pm 0.05

Rated speed rpm : 1050
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : -1.25
Tolerance mm : \pm 0.20

Rated speed rpm : 500

Pressure hPa : 220
rack travel mm : -0.35
Tolerance mm : \pm 0.15

Pressure hPa : 160
rack travel mm : -0.75
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 195

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 215

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 198.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 153.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : -1.00
Rated speed rpm : 1115
Tolerance 1/min : \pm 15

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 275
Del. quantity
cm³/1000 strokes : 37.0
Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.07.96
Test oil : ISO 4113

Combination No. : 0 402 746 645

Injection pump
Pump designation : PES6P120A320RS7364
EP type number : 0 412 726 930

Governor
Governor design. : RQV300...1050PA1204
Governor no. : 0 421 814 123

Cust. part No. : CCEP 5148A 66-236

Customer-spec. information
Customer : RENAULT V.I.
Motor : MIDR 06.20.45D41
Power KW : 219.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.25
Tolerance mm : ± 0.75

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

°NW after s.o.d. : -0.40
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 13.70
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 282.0

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 4.0

Speed
Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : -7.40
Tolerance mm : + 0.10

Del. quantity
cm3/1000 strokes : 26.0

Tolerance
cm3/1000 strokes : + 2.0

Check tolerance
cm3/1000S. : + 5.0

Speed
Tolerance

cm3/1000 strokes : 8.0

Check tolerance
cm3/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.33
Tolerance mm : + 0.25

Rated speed rpm : 1135
guide sleeve
travel mm : 8.45
Tolerance mm : + 0.25

Rated speed rpm : 752
guide sleeve
travel mm : 6.09
Tolerance mm : + 0.25

Rated speed rpm : 365
guide sleeve
travel mm : 2.40
Tolerance mm : + 0.25

Rated speed rpm : 415

guide sleeve
travel mm : 3.28
Tolerance mm : + 0.25

Rated speed rpm : 460
guide sleeve
travel mm : 3.86
Tolerance mm : + 0.25

Rated speed rpm : 1460
guide sleeve
travel mm : 11.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1230

Rack travel in mm : 11.70
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure
hPa : 1000
Del. quantity
cm3/1000 strokes : 282.0
Tolerance
cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000S. : + 4.0
Speed
Tolerance
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 303.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : -1.00
Rated speed rpm : 1140
Tolerance 1/min : + 5

rack travel mm : -9.70
Rated speed rpm : 1310
Tolerance 1/min : + 15

rack travel mm : -13.20
Tolerance mm : + 0.50

Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 267.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : -7.40
Tolerance mm : \pm 0.10

Rated speed rpm : 200
CRT mm max. : $<$ -4.90
Rated speed rpm : 360

TORQUE CONTROL

Rated speed rpm : 600
Rated speed rpm : 1050
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : -2.50
Tolerance mm : \pm 0.20

Rated speed rpm : 500
Pressure hPa : 240
rack travel mm : -1.45
Tolerance mm : \pm 0.15

Pressure hPa : 400
rack travel mm : -0.50
Tolerance mm : \pm 0.05

START CUT-OUT

J15

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 230

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 250

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 290.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 163.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 4.0

BREAKAWAY

Rack travel in mm : -1.00
Rated speed rpm : 1140
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm³/1000 strokes : 145.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000s. : \pm 19.0

LOW IDLE

Rated speed rpm : 300

Del. quantity
cm³/1000 strokes : 26.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000s. : ± 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.02.95
Test oil : ISO 4113

Combination No. : 0 402 746 964

Injection pump
Pump designation : PES6P120A320RS7317
EP type number : 0 412 726 903

Governor
Governor design. : RQV275...1000PA1001
Governor no. : 0 421 813 931

Cust. part No. : CCEP 5111B 66-181

Customer-spec. information

Customer : RVI
Motor : MIDR 062045 E/3
Power KW : 249.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 071

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.70
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 18.00
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 13.90
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 269.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 275

Rack travel in mm : -8.10
Tolerance mm : +- 0.10

Del. quantity
cm³/1000 strokes : 34.0

Tolerance
cm³/1000 strokes : +- 2.0

Check tolerance
cm³/1000S. : +- 5.0

Speed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275
guide sleeve
travel mm : 1.29
Tolerance mm : +- 0.10

Rated speed rpm : 1096
guide sleeve
travel mm : 8.56
Tolerance mm : +- 0.10

Rated speed rpm : 777
guide sleeve
travel mm : 6.11
Tolerance mm : +- 0.20

Rated speed rpm : 343
guide sleeve
travel mm : 2.33
Tolerance mm : +- 0.20

Rated speed rpm : 393
guide sleeve
travel mm : 2.99
Tolerance mm : +- 0.20

Rated speed rpm : 490
guide sleeve
travel mm : 3.81

Tolerance mm : +- 0.20

Rated speed rpm : 1370
guide sleeve
travel mm : 11.50
Tolerance mm : +- 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1165

Rack travel in mm : 12.90
Tolerance mm : +- 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 269.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 303.0
tolerance degree : +- 4.0

RATED SPEED

rack travel mm : -1.00
Rated speed rpm : 1080
Tolerance 1/min : +- 5

rack travel mm : -9.90
Rated speed rpm : 1220
Tolerance 1/min : +- 15

rack travel mm : -13.40
Tolerance mm : +- 0.55
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 248.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 275
rack travel mm : -8.10
Tolerance mm : \pm 0.10

Rated speed rpm : 200

CRT mm max. : $<$ -6.60

Rated speed rpm : 340

TORQUE CONTROL

Rated speed rpm : 600

Rated speed rpm : 1000
Tolerance mm : \pm 0.10

Rated speed rpm : 600
rack travel mm : -5.50

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : -4.10
Tolerance mm : \pm 0.30

Rated speed rpm : 500

Pressure hPa : 200
rack travel mm : -3.60
Tolerance mm : \pm 0.15

Pressure hPa : 560
rack travel mm : -0.75
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 225

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 245

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 248.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : 1000
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 109.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 130.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : -1.00
Rated speed rpm : 1080
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 15.0

Check tolerance
cm³/1000S. : +- 19.0

LOW IDLE

Rated speed rpm : 275
Del. quantity
cm³/1000 strokes : 34.0
Tolerance
cm³/1000 strokes : +- 2.0
Check tolerance
cm³/1000S. : +- 5.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.07.96
Test oil : ISO 4113
Combination No. : 0 402 746 995
Injection pump
Pump designation : PES6P120A32ORS7343
EP type number : 0 412 726 915
Governor
Governor design. : RQV300...1000PA1160K
Governor no. : 0 421 815 420

Cust. part No. : CCEP 5144A 66-232

Customer-spec. information
Customer : RENAULT V.I.
Motor : MIDR 062356 A/41
Power KW : 280.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 071

Inlet press. bar : 2.5

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.50
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 11.00
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

*NW after s.o.d. : -0.15
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

Beginning of delivery difference

betw. rack trav.
mm : 21.00
and maximum rack
travel : 11.00
Difference ° CS : 2.25

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.80
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 350.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : -7.80
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 34.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 5.0

Spread
Tolerance

cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 1.32
Tolerance mm : \pm 0.25

Rated speed rpm : 1103
guide sleeve
travel mm : 8.70
Tolerance mm : \pm 0.25

Rated speed rpm : 823
guide sleeve
travel mm : 5.92
Tolerance mm : \pm 0.25

Rated speed rpm : 405
guide sleeve
travel mm : 2.43
Tolerance mm : \pm 0.25

Rated speed rpm : 455
guide sleeve
travel mm : 2.98
Tolerance mm : \pm 0.25

Rated speed rpm : 550
guide sleeve
travel mm : 3.66
Tolerance mm : \pm 0.25

Rated speed rpm : 1440
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1300

Rack travel in mm : 11.60
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 350.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread
Tolerance

cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 117.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : -1.00
Rated speed rpm : 1100
Tolerance 1/min : \pm 5

rack travel mm : -8.80
Rated speed rpm : 1210
Tolerance 1/min : + 15

rack travel mm : -12.30
Tolerance mm : + 0.50
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 72.0
tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
rack travel mm : -7.80
Tolerance mm : + 0.10

Rated speed rpm : 200

CRT mm max. : < -6.80

Rated speed rpm : 390

TORQUE CONTROL

Rated speed rpm : 1000

Rated speed rpm : 600
rack travel mm : -0.45
Tolerance mm : + 0.15

Rated speed rpm : 800
rack travel mm : 0.10
Tolerance mm : + 0.15

Rated speed rpm : 350
rack travel mm : -1.70
Tolerance mm : + 0.30

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1000
Pressure hPa : 1200

MEASUREMENT

Pressure hPa : -

J23

Rated speed rpm : 1000
rack travel mm : -3.90
Tolerance mm : + 0.30

Rated speed rpm : 1000

Pressure hPa : 320
rack travel mm : -2.80
Tolerance mm : + 0.15

Pressure hPa : 520
rack travel mm : -1.70
Tolerance mm : + 0.05

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 225

Check
speed 1/min : > 80
Check
speed 1/min : < 245

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 381.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000s. : + 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 245.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000s. : + 4.0

BREAKAWAY

Rack travel in mm : -1.00
Rated speed rpm : 1100
Tolerance 1/min : + 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : \pm 0.75
Del. quantity
cm3/1000 strokes : 185.0
Tolerance
cm3/1000 strokes : \pm 15.0
Check tolerance
cm3/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm3/1000 strokes : 34.0
Tolerance
cm3/1000 strokes : \pm 2.0
Check tolerance
cm3/1000S. : \pm 5.0
Spreed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.06.96

Test oil : ISO 4113

Combination No. : 0 402 846 300

Injection pump
Pump designation : PE6P120A32ORS8504
EP type number : 0 412 816 200

Governor
Governor design. : RQV275...1000PA1099K
Governor no. : 0 421 815 983

Cust. part No. : 1316641/0

Customer-spec. information
Customer : DAF
Motor : WS 315 M
Power KW : 315.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 180

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.35
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 980

Rack travel in mm : 13.35
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 321.5

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 14.0

Rated speed rpm : 275

Rack travel in mm : 5.80
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 14.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275
guide sleeve
travel mm : 2.14
Tolerance mm : \pm 0.25

Rated speed rpm : 1050
guide sleeve
travel mm : 9.89
Tolerance mm : \pm 0.25

Rated speed rpm : 692
guide sleeve
travel mm : 6.45
Tolerance mm : \pm 0.25

Rated speed rpm : 284
guide sleeve
travel mm : 2.27
Tolerance mm : \pm 0.25

Rated speed rpm : 334
guide sleeve
travel mm : 3.08
Tolerance mm : \pm 0.25

Rated speed rpm : 400
guide sleeve
travel mm : 3.92
Tolerance mm : \pm 0.25

Rated speed rpm : 1310
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1130

Rack travel in mm : 12.70
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 980
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 321.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 6.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 14.0

CONTROL LEVER

control lever
position degree : 120.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 12.35
Rated speed rpm : 1037
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1150
Tolerance 1/min : \pm 15

rack travel mm : 0.70

Tolerance mm : \pm 0.70
Rated speed rpm : 1275

LOW IDLE

control lever
position degree : 76.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 275
rack travel mm : 5.80
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 405
Tolerance 1/min : \pm 30

Rated speed rpm : 175

CRT mm min. : $>$ 8.00

TORQUE CONTROL

Rated speed rpm : 980
rack travel mm : 13.35
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 12.75
Tolerance mm : \pm 0.05

Rated speed rpm : 600
rack travel mm : 12.05
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 12.00
Tolerance mm : \pm 0.10

Rated speed rpm : 400
rack travel mm : 11.95
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 980
Pressure hPa : 1500
rack travel mm : 13.35
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 980
rack travel mm : 8.90
Tolerance mm : \pm 0.10

Rated speed rpm : 980

Pressure hPa : 750
rack travel mm : 12.25
Tolerance mm : \pm 0.05

Pressure hPa : 420
rack travel mm : 10.00
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 316.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 8.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 14.0

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 188.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 6.0

BREAKAWAY

Rack travel in mm : 12.35
Rated speed rpm : 1037
Tolerance 1/min : \pm 5

LOW IDLE

Rated speed rpm : 275
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 14.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 26.04.96
Test oil : ISO 4113

Combination No. : 0 402 846 302

Injection pump
Pump designation : PE6P120A32ORS8520
EP type number : 0 412 826 202

Governor
Governor design. : RQV275...1000PA1269K
Governor no. : 0 421 815 969

Cust. part No. : 1310222/2

Customer-spec. information
Customer : DAF
Motor : XF 355 M
Power KW : 355.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 086

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 110
Tolerance l/h : ± 20.0

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 980

Rack travel in mm : 14.15
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 344.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 5.0

Spreed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 275

Rack travel in mm : 4.90
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 18.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Spreed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 13.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275
guide sleeve
travel mm : 2.04
Tolerance mm : ± 0.20

Rated speed rpm : 1062
guide sleeve
travel mm : 10.05
Tolerance mm : ± 0.15

Rated speed rpm : 697
guide sleeve
travel mm : 6.49
Tolerance mm : ± 0.25

Rated speed rpm : 400
guide sleeve
travel mm : 3.92
Tolerance mm : ± 0.25

Rated speed rpm : 1310
guide sleeve
travel mm : 13.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1150

Rack travel in mm : 13.10
Tolerance mm : ± 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 980
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 344.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 5.0

Spreed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 118.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 13.15
Rated speed rpm : 1050
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1160
Tolerance 1/min : ± 15

rack travel mm : 0.70
Tolerance mm : ± 0.70
Rated speed rpm : 1275

LOW IDLE

control lever
position degree : 73.0

tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 275
rack travel mm : 4.90
Tolerance mm : \pm 0.10

Rated speed rpm : 175

CRT mm min. : $>$ 8.20

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 980
rack travel mm : 14.15
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 13.95
Tolerance mm : \pm 0.10

Rated speed rpm : 750
rack travel mm : 13.70
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 13.20
Tolerance mm : \pm 0.10

Rated speed rpm : 600
rack travel mm : 12.75
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 12.50
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 980
Pressure hPa : 1500
rack travel mm : 14.15
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 980
rack travel mm : 9.15
Tolerance mm : \pm 0.10

Rated speed rpm : 980

Pressure hPa : 750
rack travel mm : 12.90
Tolerance mm : \pm 0.05

Pressure hPa : 380
rack travel mm : 10.30
Tolerance mm : \pm 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 353.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000s. : 15.0

Aneroid pressure
hPa : -
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 200.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000s. : 15.0

BREAKAWAY

Rack travel in mm : 13.15
Rated speed rpm : 1050
Tolerance 1/min : \pm 5

LOW IDLE

Rated speed rpm : 275
Del. quantity
cm³/1000 strokes : 18.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 13.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.03.96
Test oil : ISO 4113

Combination No. : 0 402 946 017

Injection pump
Pump designation : PES6P120A720RS8039
EP type number : 0 412 926 026

Governor
Governor design. : RQV250...950PA1243
Governor no. : 0 421 814 162

Cust. part No. : 1374808

Customer-spec. information
Customer : SCANIA
Motor : DSC 11.79

TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 115
Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.15
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery blocking

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 11.90

Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 298.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 9.0

Spreed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 14.0

Rated speed rpm : 250

Rack travel in mm : 5.60
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 21.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spreed
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 250
guide sleeve
travel mm : 1.33
Tolerance mm : \pm 0.20

Rated speed rpm : 1008
guide sleeve
travel mm : 8.61
Tolerance mm : \pm 0.15

Rated speed rpm : 732
guide sleeve
travel mm : 6.35
Tolerance mm : \pm 0.25

Rated speed rpm : 470
guide sleeve
travel mm : 4.09

Tolerance mm : \pm 0.25

Rated speed rpm : 1260
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1165

Rack travel in mm : 10.90
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 298.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 9.0

Spreed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 14.0

CONTROL LEVER

control lever
position degree : 55.0
tolerance degree : \pm 4.0

control lever
position degree : 119.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 10.90
Rated speed rpm : 995
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1115
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 81.0
tolerance degree : \pm 4.0

control lever
position degree : 17.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 250
rack travel mm : 5.60
Tolerance mm : \pm 0.10

Rated speed rpm : 150
CRT mm min. : $>$ 8.10
Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 11.90
Tolerance mm : \pm 0.05

Rated speed rpm : 950
rack travel mm : 11.90
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 11.90
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 9.20
Tolerance mm : \pm 0.20

Rated speed rpm : 500

Pressure hPa : 350
rack travel mm : 10.30
Tolerance mm : \pm 0.15

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Pressure hPa : 600
rack travel mm : 11.40
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 170

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 190

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 282.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000s. : \pm 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 197.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000s. : \pm 4.0

BREAKAWAY

Rack travel in mm : 10.90
Rated speed rpm : 995
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 225.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000s. : \pm 24.0

LOW IDLE

Rated speed rpm : 250
Del. quantity
cm³/1000 strokes : 21.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.02.96
Test oil : ISO 4113
Combination No. : 0 402 946 019
Injection pump
Pump designation : PES6P120A72ORS8041
EP type number : 0 412 926 027
Governor
Governor design. : RQV250...950PA1253
: -1
Governor no. : 0 421 814 167
Cust. part No. : 1383216

Customer-spec. information
Customer : SCANIA
Motor : DSC 11.74

TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 110
Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.40
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

Start of delivery blocking

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 10.35
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 227.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 7.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 14.0

Rated speed rpm : 250

Rack travel in mm : 5.60
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 16.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spread
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 250
guide sleeve
travel mm : 1.31
Tolerance mm : \pm 0.20

Rated speed rpm : 1005
guide sleeve
travel mm : 7.25
Tolerance mm : \pm 0.15

Rated speed rpm : 673
guide sleeve
travel mm : 4.96
Tolerance mm : \pm 0.25

Rated speed rpm : 420
guide sleeve
travel mm : 3.37
Tolerance mm : \pm 0.25

Rated speed rpm : 1390
guide sleeve
travel mm : 11.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1250

Rack travel in mm : 9.35
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 227.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 7.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 14.0

CONTROL LEVER

control lever
position degree : 58.0
tolerance degree : \pm 4.0

control lever
position degree : 111.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 9.35
Rated speed rpm : 995
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1115
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 66.0
tolerance degree : \pm 4.0

control lever
position degree : 12.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 250
rack travel mm : 5.60
Tolerance mm : \pm 0.10

Rated speed rpm : 150

CRT mm min. : $>$ 7.00

Rated speed rpm : 300

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 10.35
Tolerance mm : \pm 0.05

Rated speed rpm : 950
rack travel mm : 10.35
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 10.35
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 8.20
Tolerance mm : \pm 0.20

Rated speed rpm : 500

Pressure hPa : 260
rack travel mm : 8.80
Tolerance mm : \pm 0.15

Pressure hPa : 430
rack travel mm : 9.80
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 170

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 190

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 216.0
Tolerance
cm³/1000 strokes : \pm 4.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 153.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 9.35
Rated speed rpm : 995
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 170.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 24.0

LOW IDLE

Rated speed rpm : 250
Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 6.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.07.96
Test oil : ISO 4113
Combination No. : 0 403 246 044A
Injection pump
Pump designation : PES6MW100/720RS1522
EP type number : 0 413 206 023
Governor
Governor design. : RQV300...1300MW148
: -1
Governor no. : 0 420 083 322
Cust. part No. : 0250744602

Customer-spec. information
Customer : MB-NFZ
Motor : OM366LA
Power kW : 177.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : + 1.5
Test lines : 1 680 750 089
Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : + 1.0
Prestroke mm : 4.55
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10
Rack travel in mm : 20.00
Tolerance mm : + 1.00
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

BASIC SETTING

Rated speed rpm : 1300
Rack travel in mm : 14.45
Tolerance mm : + 0.05
Del. quantity
cm3/1000 strokes : 133.0
Tolerance
cm3/1000 strokes : + 1.0
Check tolerance
cm3/1000S. : + 4.0
Speed
Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 300

Rack travel in mm : 4.50
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Spreed
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 4.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 0.91
Tolerance mm : ± 0.20

Rated speed rpm : 1354
guide sleeve
travel mm : 8.08
Tolerance mm : ± 0.15

Rated speed rpm : 1017
guide sleeve
travel mm : 5.62
Tolerance mm : ± 0.25

Rated speed rpm : 690
guide sleeve
travel mm : 3.34
Tolerance mm : ± 0.25

Rated speed rpm : 1830
guide sleeve
travel mm : 13.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1570

Rack travel in mm : 10.00
Tolerance mm : ± 2.70

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FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 133.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 116.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 13.45
Rated speed rpm : 1345
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1520
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1600

LOW IDLE

control lever
position degree : 75.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 4.50
Tolerance mm : ± 0.10

Rated speed rpm : 200

CRT mm min. : > 4.80

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 14.45
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 14.45
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 14.45
Tolerance mm : \pm 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : \pm 0.05

Rated speed rpm : 500

Pressure hPa : 750
rack travel mm : 4.80
Tolerance mm : \pm 0.10

Pressure hPa : 300
rack travel mm : 1.50
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 200

Check
speed 1/min : > 80
Check
speed 1/min : < 220

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 128.0

Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 46.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 13.45
Rated speed rpm : 1345
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 160.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 4.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.07.96
Test oil : ISO 4113
Combination No. : 0 403 246 057
Injection pump
Pump designation : PES6MW100/720RS1527
EP type number : 0 413 206 026
Governor
Governor design. : RQV300...1300MW155
: -1
Governor no. : 0 420 083 345
Cust. part No. : 0270748002

Customer-spec. information
Customer : MB-NFZ
Motor : OM366LA
Power KW : 155.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holde
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 089
Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0
Prestroke mm : 4.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 20.00
Tolerance mm : ± 1.00
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300
Rack travel in mm : 13.30
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 118.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0
Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 300

Rack travel in mm : 3.80

Tolerance mm : ± 0.10

Del. quantity

cm³/1000 strokes : 12.0

Tolerance

cm³/1000 strokes : ± 2.0

Check tolerance

cm³/1000S. : ± 4.5

Speed

Tolerance

cm³/1000 strokes : 3.5

Check tolerance

cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300

guide sleeve

travel mm : 0.91

Tolerance mm : ± 0.20

Rated speed rpm : 1355

guide sleeve

travel mm : 8.62

Tolerance mm : ± 0.15

Rated speed rpm : 1067

guide sleeve

travel mm : 6.13

Tolerance mm : ± 0.25

Rated speed rpm : 730

guide sleeve

travel mm : 3.51

Tolerance mm : ± 0.25

Rated speed rpm : 1750

guide sleeve

travel mm : 13.50

Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1520

Rack travel in mm : 10.00

Tolerance mm : ± 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300

Aneroid pressure

hPa : 1000

Del. quantity

cm³/1000 strokes : 118.0

Tolerance

cm³/1000 strokes : ± 1.0

Check tolerance

cm³/1000S. : ± 3.0

Speed

Tolerance

cm³/1000 strokes : 3.5

Check tolerance

cm³/1000S. : 6.0

CONTROL LEVER

control lever

position degree : 110.0

tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 12.30

Rated speed rpm : 1345

Tolerance 1/min : ± 5

rack travel mm : 4.00

Rated speed rpm : 1465

Tolerance 1/min : ± 15

rack travel mm : 0.50

Tolerance mm : ± 0.50

Rated speed rpm : 1550

LOW IDLE

control lever

position degree : 75.0

tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300

rack travel mm : 3.80

Tolerance mm : ± 0.10

rack travel mm : 2.00

Rated speed rpm : 400

Tolerance 1/min : ± 30

Rated speed rpm : 200
CRT mm min. : > 4.54

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 13.30
Tolerance mm : \pm 0.05

Rated speed rpm : 600
rack travel mm : 13.30
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 13.30
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 500
rack travel mm : 3.25
Tolerance mm : \pm 0.10

Pressure hPa : 300
rack travel mm : 1.00
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 200

Check
speed 1/min : > 80
Check
speed 1/min : < 220

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 600

Del. quantity
cm³/1000 strokes : 117.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : 1000
Rated speed rpm : 1300
Del. quantity
cm³/1000 strokes : 104.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 3.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 48.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 12.30
Rated speed rpm : 1345
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 12.0

Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.07.96
Test oil : ISO 4113
Combination No. : 0 403 246 058
Injection pump
Pump designation : PES6MW100/72ORS1527
EP type number : 0 413 206 026
Governor
Governor design. : RQV300...1300MW155
: -2
Governor no. : 0 420 083 346
Cust. part No. : 0270748102

Customer-spec. information
Customer : MB-NFZ
Motor : OM366LA
Power KW : 155.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 089
Outside diameter : 8.0

K21

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0
Prestroke mm : 4.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 20.00
Tolerance mm : ± 1.00
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300
Rack travel in mm : 13.30
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 118.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0
Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 6.0

Rated speed rpm : 300

Rack travel in mm : 3.80
Tolerance mm : \pm 0.10
Del. quantity
cm3/1000 strokes : 12.0
Tolerance
cm3/1000 strokes : \pm 2.0
Check tolerance
cm3/1000S. : \pm 4.5
Spreed
Tolerance
cm3/1000 strokes : 3.5
Check tolerance
cm3/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 0.91
Tolerance mm : \pm 0.20

Rated speed rpm : 1355
guide sleeve
travel mm : 8.62
Tolerance mm : \pm 0.15

Rated speed rpm : 1067
guide sleeve
travel mm : 6.13
Tolerance mm : \pm 0.25

Rated speed rpm : 730
guide sleeve
travel mm : 3.51
Tolerance mm : \pm 0.25

Rated speed rpm : 1750
guide sleeve
travel mm : 13.50
Tolerance mm : \pm 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1520
Rack travel in mm : 10.00
Tolerance mm : \pm 2.70

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
Aneroid pressure
hPa : 1000
Del. quantity
cm3/1000 strokes : 118.0
Tolerance
cm3/1000 strokes : \pm 1.0
Check tolerance
cm3/1000S. : \pm 3.0
Spreed
Tolerance
cm3/1000 strokes : 3.5
Check tolerance
cm3/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 110.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 12.30
Rated speed rpm : 1345
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1465
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1550

LOW IDLE

control lever
position degree : 75.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 3.80
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 400
Tolerance 1/min : \pm 30

Rated speed rpm : 200
CRT mm min. : > 4.54

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 13.30
Tolerance mm : \pm 0.05

Rated speed rpm : 600
rack travel mm : 13.30
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1000
rack travel mm : 13.30
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 500
rack travel mm : 3.25
Tolerance mm : \pm 0.10

Pressure hPa : 300
rack travel mm : 1.00
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 200

Check
speed 1/min : > 80
Check
speed 1/min : < 220

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 600

Del. quantity
cm³/1000 strokes : 117.0

Tolerance
cm³/1000 strokes : \pm 1.5

Check tolerance
cm³/1000S. : \pm 4.0

Speed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : -

Rated speed rpm : 500

Del. quantity
cm³/1000 strokes : 48.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 12.30
Rated speed rpm : 1345
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity
cm³/1000 strokes : 150.0

Tolerance
cm³/1000 strokes : \pm 5.0

Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 300

Del. quantity
cm³/1000 strokes : 12.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.5

Speed

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 07.06.96
Test oil : ISO 4113
Combination No. : 9 400 085 384
Injection pump
Pump designation : PES4A95D410RS2887
EP type number : 9 400 084 040
Governor
Governor design. : RQV300...1300AB1307L
Governor no. : 9 420 080 385

Cust. part No. : 0260745402

Customer-spec. information
Customer : MBB
Motor : OM 364A/ EURO I
Power KW : 81.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 11.05
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 85.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 300

Rack travel in mm : 8.20
 Tolerance mm : \pm 0.10
 Del. quantity
 cm³/1000 strokes : 13.0
 Tolerance
 cm³/1000 strokes : \pm 2.0
 Check tolerance
 cm³/1000S. : \pm 4.5
 Spreed
 Tolerance
 cm³/1000 strokes : 5.5
 Check tolerance
 cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 1.05
 Tolerance mm : \pm 0.25

Rated speed rpm : 1500
 guide sleeve
 travel mm : 8.55
 Tolerance mm : \pm 0.05

Rated speed rpm : 500
 guide sleeve
 travel mm : 2.55
 Tolerance mm : \pm 0.25

Rated speed rpm : 750
 guide sleeve
 travel mm : 4.20
 Tolerance mm : \pm 0.10

GUIDE SLEEVE POSITION

Rated speed rpm : 1500
 Rack travel in mm : 16.50
 Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
 Aneroid pressure
 hPa : 700
 Del. quantity
 cm³/1000 strokes : 85.0

Tolerance
 cm³/1000 strokes : \pm 1.0
 Check tolerance
 cm³/1000S. : \pm 3.0
 Spreed
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 8.0

CONTROL LEVER

control lever
 position degree : 59.0
 tolerance degree : \pm 4.0

control lever
 position degree : 110.0
 tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 10.00
 Rated speed rpm : 1345
 Tolerance 1/min : \pm 5

rack travel mm : 4.00
 Rated speed rpm : 1485
 Tolerance 1/min : \pm 15

rack travel mm : 0.50
 Tolerance mm : \pm 0.50
 Rated speed rpm : 1640

LOW IDLE

control lever
 position degree : 71.0
 tolerance degree : \pm 4.0

control lever
 position degree : 22.0
 tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
 rack travel mm : 8.20
 Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : > 9.50

Rated speed rpm : 415

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 11.05
Tolerance mm : \pm 0.05

Rated speed rpm : 640
rack travel mm : 11.95
Tolerance mm : \pm 0.05

Rated speed rpm : 950
rack travel mm : 11.35
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 11.65
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 11.95
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500

Rated speed rpm : 500

Pressure hPa : 240
rack travel mm : 0.35
Tolerance mm : \pm 0.05

Pressure hPa : 350
rack travel mm : 1.10
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 250

Check
speed 1/min : > 80
Check
speed 1/min : < 260

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 700
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 81.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 57.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 10.00
Rated speed rpm : 1345
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 14.20
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 82.5
Tolerance
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.05.96
Test oil : ISO 4113
Combination No. : 9 400 085 385
Injection pump
Pump designation : PES6A95D410RS2886
EP type number : 9 400 084 039
Governor
Governor design. : RQV300...1300AB1306L
Governor no. : 9 420 080 384

Cust. part No. : 0260745502

Customer-spec. information
Customer : MBB
Motor : OM 366 A
Power KW : 125.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 10.65
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 81.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 300

Rack travel in mm : 8.00

Tolerance mm : \pm 0.10

Del. quantity

cm³/1000 strokes : 10.5

Tolerance

cm³/1000 strokes : \pm 2.0

Check tolerance

cm³/1000S. : \pm 4.5

Spread

Tolerance

cm³/1000 strokes : 5.5

Check tolerance

cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300

guide sleeve

travel mm : 1.05

Tolerance mm : \pm 0.25

Rated speed rpm : 1500

guide sleeve

travel mm : 8.55

Tolerance mm : \pm 0.05

Rated speed rpm : 500

guide sleeve

travel mm : 2.55

Tolerance mm : \pm 0.25

Rated speed rpm : 750

guide sleeve

travel mm : 4.20

Tolerance mm : \pm 0.10

GUIDE SLEEVE POSITION

Rated speed rpm : 1500

Rack travel in mm : 16.50

Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300

Aneroid pressure

hPa : 900

Del. quantity

cm³/1000 strokes : 81.0

Tolerance

cm³/1000 strokes : \pm 1.0

Check tolerance

cm³/1000S. : \pm 3.0

Spread

Tolerance

cm³/1000 strokes : 3.5

Check tolerance

cm³/1000S. : 8.0

CONTROL LEVER

control lever

position degree : 59.0

tolerance degree : \pm 4.0

control lever

position degree : 108.0

tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 9.60

Rated speed rpm : 1355

Tolerance 1/min : \pm 5

rack travel mm : 4.00

Rated speed rpm : 1485

Tolerance 1/min : \pm 15

rack travel mm : 0.50

Tolerance mm : \pm 0.50

Rated speed rpm : 1600

LOW IDLE

control lever

position degree : 70.0

tolerance degree : \pm 4.0

control lever

position degree : 22.0

tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300

rack travel mm : 8.00

Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : $>$ 9.50

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 10.65
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 11.55
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 11.35
Tolerance mm : \pm 0.05

Rated speed rpm : 1030
rack travel mm : 10.85
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 11.55
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500

Rated speed rpm : 500

Pressure hPa : 250
rack travel mm : 0.50
Tolerance mm : \pm 0.10

Pressure hPa : 390
rack travel mm : 1.35
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 250

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 260

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 79.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure
hPa : 900
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 78.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 50.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 9.60
Rated speed rpm : 1355
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 13.80
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 78.0
Tolerance
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 10.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.07.96
Test oil : ISO 4113
Combination No. : 9 400 085 393
Injection pump
Pump designation : PES4A95D410RS2887
EP type number : 9 400 084 040
Governor
Governor design. : RQV300...1300AB1311L
Governor no. : 9 420 080 390

Cust. part No. : 0260746802

Customer-spec. information
Customer : MBB
Motor : OM 364 LA/EURO I
Power KW : 100.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 12.45
Tolerance mm : ± 0.05

Del. quantity
cm3/1000 strokes : 99.0

Tolerance
cm3/1000 strokes : ± 1.0

Check tolerance
cm3/1000S. : ± 3.0

Spreed
Tolerance
cm3/1000 strokes : 3.5

Check tolerance
cm3/1000S. : 8.0

Rated speed rpm : 300

Rack travel in mm : 8.30
 Tolerance mm : + 0.10
 Del. quantity
 cm³/1000 strokes : 12.0
 Tolerance
 cm³/1000 strokes : + 2.0
 Check tolerance
 cm³/1000S. : + 4.5
 Spreed
 Tolerance
 cm³/1000 strokes : 5.5
 Check tolerance
 cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 1.05
 Tolerance mm : + 0.25

Rated speed rpm : 1500
 guide sleeve
 travel mm : 8.55
 Tolerance mm : + 0.05

Rated speed rpm : 500
 guide sleeve
 travel mm : 2.55
 Tolerance mm : + 0.25

Rated speed rpm : 750
 guide sleeve
 travel mm : 4.20
 Tolerance mm : + 0.10

GUIDE SLEEVE POSITION

Rated speed rpm : 1500

Rack travel in mm : 16.50
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
 Aneroid pressure
 hPa : 700
 Del. quantity
 cm³/1000 strokes : 99.0

Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 3.0
 Spreed
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 8.0

CONTROL LEVER

control lever
 position degree : 62.0
 tolerance degree : + 4.0

control lever
 position degree : 111.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.40
 Rated speed rpm : 1345
 Tolerance 1/min : + 5

rack travel mm : 4.00
 Rated speed rpm : 1510
 Tolerance 1/min : + 15

rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1640

LOW IDLE

control lever
 position degree : 71.0
 tolerance degree : + 4.0

control lever
 position degree : 22.0
 tolerance degree : + 4.0

Testing:

Rated speed rpm : 300
 rack travel mm : 8.30
 Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 9.80

Rated speed rpm : 415

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 12.45
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 12.45
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 12.45
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500

Rated speed rpm : 500

Pressure hPa : 150
rack travel mm : 0.55
Tolerance mm : \pm 0.05

Pressure hPa : 310
rack travel mm : 1.60
Tolerance mm : \pm 0.10

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 250

Check
speed 1/min : > 80
Check
speed 1/min : < 260

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 700
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 90.0
Tolerance
cm³/1000 strokes : \pm 2.0

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Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 51.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 11.40
Rated speed rpm : 1345
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 13.70
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 75.0
Tolerance
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 12.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.07.96
Test oil : ISO 4113
Combination No. : 9 400 085 396
Injection pump
Pump designation : PES6A95D410RS2886
EP type number : 9 400 084 039
Governor
Governor design. : RQV300...1300AB1312L
Governor no. : 9 420 080 391

Cust. part No. : 0260749602

Customer-spec. information
Customer : MBB
Motor : OM 366LA/EURO I
Power KW : 170.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 12.25
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 109.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 300

Rack travel in mm : 7.50

Tolerance mm : \pm 0.10

Del. quantity

cm³/1000 strokes : 16.5

Tolerance

cm³/1000 strokes : \pm 2.0

Check tolerance

cm³/1000S. : \pm 4.5

Speed

Tolerance

cm³/1000 strokes : 5.5

Check tolerance

cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300

guide sleeve

travel mm : 1.05

Tolerance mm : \pm 0.25

Rated speed rpm : 1500

guide sleeve

travel mm : 8.55

Tolerance mm : \pm 0.05

Rated speed rpm : 500

guide sleeve

travel mm : 2.55

Tolerance mm : \pm 0.25

Rated speed rpm : 750

guide sleeve

travel mm : 4.20

Tolerance mm : \pm 0.10

GUIDE SLEEVE POSITION

Rated speed rpm : 1500

Rack travel in mm : 16.50

Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300

Aneroid pressure

hPa : 1200

Del. quantity

cm³/1000 strokes : 109.0

Tolerance

cm³/1000 strokes : \pm 1.0

Check tolerance

cm³/1000S. : \pm 3.0

Speed

Tolerance

cm³/1000 strokes : 3.5

Check tolerance

cm³/1000S. : 8.0

CONTROL LEVER

control lever

position degree : 60.0

tolerance degree : \pm 4.0

control lever

position degree : 110.0

tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 11.20

Rated speed rpm : 1350

Tolerance 1/min : \pm 5

rack travel mm : 4.00

Rated speed rpm : 1515

Tolerance 1/min : \pm 15

rack travel mm : 0.50

Tolerance mm : \pm 0.50

Rated speed rpm : 1650

LOW IDLE

control lever

position degree : 69.0

tolerance degree : \pm 4.0

control lever

position degree : 20.0

tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300

rack travel mm : 7.50

Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : $>$ 8.80

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 12.25
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 12.75
Tolerance mm : \pm 0.05

Rated speed rpm : 950
rack travel mm : 12.75
Tolerance mm : \pm 0.05

Rated speed rpm : 1240
rack travel mm : 12.25
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 12.75
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500

Rated speed rpm : 500

Pressure hPa : 660
rack travel mm : 2.40
Tolerance mm : \pm 0.10

Pressure hPa : 410
rack travel mm : 1.35
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 220

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 111.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure
hPa : 1200
Rated speed rpm : 950
Del. quantity
cm³/1000 strokes : 111.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 54.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 11.20
Rated speed rpm : 1350
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 15.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 108.5
Tolerance
cm³/1000 strokes : \pm 7.5
Check tolerance
cm³/1000S. : \pm 10.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 16.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000s. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 24.07.96

Test oil : ISO 4113

Combination No. : 9 407 083 286

Injection pump

Pump designation : PES6A80D320RS1271

EP type number : 9 400 083 058

Governor

Governer design. : RSV350...1500A2B2028

: -1R

Governer no. : 9 420 083 175

Cust. part No. :

Customer-spec. information

Customer : MWM

Motor : D 229-6

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 003

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 2.25

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Beginning of delivery differende

and maximum rack

travel : 10.50

Tolerance mm : ± 1.50

Difference ° CS : 4.50

BASIC SETTING

Rated speed rpm : 1480

Rack travel in mm : 9.25

Tolerance mm : ± 0.05

Del. quantity

cm³/1000 strokes : 50.0

Tolerance

cm³/1000 strokes : ± 0.5

Check tolerance

cm³/1000S. : ± 2.0

Speed
Tolerance
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 4.0

Rated speed rpm : 350

Rack travel in mm : 7.00
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 9.0

Tolerance
cm³/1000 strokes : \pm 1.5

Check tolerance
cm³/1000S. : \pm 3.5

Speed
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 6.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : \pm 0.35

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1480
Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 50.0

Tolerance
cm³/1000 strokes : \pm 0.5

Check tolerance
cm³/1000S. : \pm 2.0

Speed
Tolerance
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 4.0

CONTROL LEVER

control lever
position degree : 60.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 8.20
Rated speed rpm : 1525
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1575
Tolerance 1/min : \pm 15

rack travel mm : 0.85
Tolerance mm : \pm 0.55
Rated speed rpm : 1700

LOW IDLE

control lever
position degree : 20.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 6.50

Testing:

Rated speed rpm : 350
rack travel mm : 7.00
Tolerance mm : \pm 0.10

rack travel mm : 2.00
Rated speed rpm : 630
Tolerance 1/min : \pm 30

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1480
rack travel mm : 9.25
Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 10.85
Tolerance mm : \pm 0.05

Rated speed rpm : 1300
rack travel mm : 9.50

Tolerance mm : \pm 0.10
Rated speed rpm : 1000
rack travel mm : 10.35
Tolerance mm : \pm 0.15

Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 6.0

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 52.5
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 3.0

Aneroid pressure
hPa : -
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 56.5
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 8.20
Rated speed rpm : 1525
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : \pm 1.00

LOW IDLE

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 9.0
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 3.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 18.07.96
Test oil : ISO 4113

Combination No. : 0 402 736 906

Injection pump
Pump designation : PES6P120A120RS7416
EP type number : 0 412 726 959

Governor
Governor design. : RQV400...1250PA1060
: -4K
Governor no. : 0 421 815 514

Cust. part No. : 3928146

Customer-spec. information
Customer : CDC
Motor : 6BTA-A
Power kW : 130.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery blocking

*NW after s.o.d. : 6.25
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 13.65
Tolerance mm : ± 0.05

<hr/>	
Del. quantity	
cm3/1000 strokes :	160.5
<hr/>	
Tolerance	
cm3/1000 strokes :	+ 1.0
<hr/>	
Check tolerance	
cm3/1000S. :	+ 4.0
<hr/>	
Spread	
Tolerance	
cm3/1000 strokes :	8.0
<hr/>	
Check tolerance	
cm3/1000S. :	12.0
<hr/>	
Rated speed rpm	: 420
<hr/>	
Rack travel in mm :	6.00
Tolerance mm :	+ 0.10
Del. quantity	
cm3/1000 strokes :	15.0
Tolerance	
cm3/1000 strokes :	+ 3.0
Check tolerance	
cm3/1000S. :	+ 5.0
Spread	
Tolerance	
cm3/1000 strokes :	4.0
Check tolerance	
cm3/1000S. :	8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 400
guide sleeve	
travel mm	: 1.44
Tolerance mm	: + 0.20
<hr/>	
Rated speed rpm	: 1329
guide sleeve	
travel mm	: 7.83
Tolerance mm	: + 0.15
<hr/>	
Rated speed rpm	: 939
guide sleeve	
travel mm	: 5.18
Tolerance mm	: + 0.25
<hr/>	
Rated speed rpm	: 640
guide sleeve	
travel mm	: 3.56
Tolerance mm	: + 0.25

Rated speed rpm	: 1690
guide sleeve	
travel mm	: 11.50
Tolerance mm	: + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm	: 1390
Rack travel in mm	: 12.60

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1250
Aneroid pressure	
hPa	: 1200
Del. quantity	
cm3/1000 strokes :	160.5
Tolerance	
cm3/1000 strokes :	+ 1.0
Check tolerance	
cm3/1000S. :	+ 4.0
Spread	
Tolerance	
cm3/1000 strokes :	8.0
Check tolerance	
cm3/1000S. :	12.0

CONTROL LEVER

control lever	
position degree	: 117.0
tolerance degree	: + 4.0

RATED SPEED

rack travel mm	: 12.60
Rated speed rpm	: 1325
Tolerance 1/min	: + 15
<hr/>	
rack travel mm	: 4.00
Rated speed rpm	: 1475
Tolerance 1/min	: + 5
<hr/>	
rack travel mm	: 0.50
Tolerance mm	: + 0.50
Rated speed rpm	: 1550

LOW IDLE

control lever	
position degree	: 71.0

tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 420
rack travel mm : 6.00
Tolerance mm : \pm 0.10

Rated speed rpm : 300

CRT mm min. : $>$ 5.80

Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 13.65
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 11.85
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 11.60
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1250
Pressure hPa : 1200

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1250
rack travel mm : 10.40
Tolerance mm : \pm 0.20

Rated speed rpm : 1250

Pressure hPa : 375
rack travel mm : 12.70
Tolerance mm : \pm 0.30

Pressure hPa : 260
rack travel mm : 11.60
Tolerance mm : \pm 0.20

START CUT-OUT

Rated speed rpm : $>$ 100

Rated speed rpm : $<$ 280

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 131.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 107.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 12.60
Rated speed rpm : 1325
Tolerance 1/min : \pm 15

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 14.10
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 155.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 420
Del. quantity
cm³/1000 strokes : 15.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 5.0
Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.07.96
Test oil : ISO 4113
Combination No. : 0 402 746 643
Injection pump
Pump designation : PES6P120A320LS7362
EP type number : 0 412 726 929
Governor
Governor design. : RQV350...1100PA1201K
Governor no. : 0 421 815 456

Cust. part No. : 1824681C91

Customer-spec. information
Customer : NAVISTAR
Motor : DTA-530
Power KW : 245.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 076

Inlet press. bar : 2.8
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.90
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 14.65
Tolerance mm : ± 0.05

Del. quantity
cm3/1000 strokes : 278.5

Tolerance
cm3/1000 strokes : ± 1.0

Check tolerance
cm3/1000S. : ± 4.0

Spreed
Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 350

Rack travel in mm : 5.90
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 24.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 5.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 1700

Del. quantity
cm³/1000 strokes : 278.5

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 121.0
tolerance degree : \pm 6.0

RATED SPEED

rack travel mm : 13.50
Rated speed rpm : 1065
Tolerance 1/min : \pm 15

rack travel mm : 4.00
Rated speed rpm : 1175

L20

Tolerance 1/min : \pm 5

rack travel mm : 0.50

Tolerance mm : \pm 0.50

Rated speed rpm : 1225

LOW IDLE

control lever
position degree : 78.0
tolerance degree : \pm 6.0

Testing:

Rated speed rpm : 350
rack travel mm : 5.90
Tolerance mm : \pm 0.10

Rated speed rpm : 275

CRT mm min. : > 8.00

Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 14.65
Tolerance mm : \pm 0.05

Rated speed rpm : 650
rack travel mm : 13.75
Tolerance mm : \pm 0.10

Rated speed rpm : 750
rack travel mm : 14.00
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1000
Pressure hPa : 1700
rack travel mm : 14.65
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1000
rack travel mm : 10.55
Tolerance mm : \pm 0.20

Rated speed rpm : 1000

Pressure hPa : 1130
 rack travel mm : 13.50
 Tolerance mm : \pm 0.20

Pressure hPa : 420
 rack travel mm : 11.55
 Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : > 100
 Rated speed rpm : < 280

Check
 speed 1/min : > 80
 Check
 speed 1/min : < 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
 hPa : 1700
 Rated speed rpm : 650
 Del. quantity
 cm³/1000 strokes : 262.5
 Tolerance
 cm³/1000 strokes : \pm 3.0
 Check tolerance
 cm³/1000s. : \pm 6.0
 Spreed
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000s. : 12.0

Aneroid pressure
 hPa : -
 Rated speed rpm : 650
 Del. quantity
 cm³/1000 strokes : 135.5
 Tolerance
 cm³/1000 strokes : \pm 2.0
 Check tolerance
 cm³/1000s. : \pm 4.0

BREAKAWAY

Rack travel in mm : 13.50
 Rated speed rpm : 1065
 Tolerance 1/min : \pm 15

STARTING FUEL DELIVERY

Rated speed rpm : 100
 rack travel mm : 10.70
 Tolerance mm : \pm 0.50
 Del. quantity
 cm³/1000 strokes : 168.0
 Tolerance
 cm³/1000 strokes : \pm 20.0
 Check tolerance
 cm³/1000s. : \pm 25.0

LOW IDLE

Rated speed rpm : 350
 Del. quantity
 cm³/1000 strokes : 24.0
 Tolerance
 cm³/1000 strokes : \pm 3.0
 Check tolerance
 cm³/1000s. : \pm 5.0
 Spreed
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000s. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.07.96

Test oil : ISO 4113

Combination No. : 0 402 746 644

Injection pump

Pump designation : PES6P120A320LS7362

EP type number : 0 412 726 929

Governor

Governor design. : RQV350...1100PA1202K

Governor no. : 0 421 815 457

Cust. part No. : 1824682C91

Customer-spec. information

Customer : NAVISTAR

Motor : DTA-530

Power KW : 245.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 2 417 413 076

Inlet press. bar : 2.8

Tolerance bar : ± 0.1

Test nozzle holde
assembly

: 1 688 901 103

Opening pressure
bar

: 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0

Tolerance bar : ± 1.0

Prestroke mm : 2.90

Tolerance mm : ± 0.05

Check

tolerance mm : ± 1.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.30

Check

tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 14.65

Tolerance mm : ± 0.05

Del. quantity

cm³/1000 strokes : 278.5

Tolerance

cm³/1000 strokes : ± 1.0

Check tolerance

cm³/1000S. : ± 4.0

Speed

Tolerance

cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 350

Rack travel in mm : 5.90
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 24.5
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 5.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 1800
Del. quantity
cm³/1000 strokes : 278.5
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 118.0
tolerance degree : + 6.0

RATED SPEED

rack travel mm : 13.05
Rated speed rpm : 1160
Tolerance 1/min : + 15

rack travel mm : 4.00
Rated speed rpm : 1290

Tolerance 1/min : + 5

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 78.0
tolerance degree : + 6.0

Testing:

Rated speed rpm : 350
rack travel mm : 5.90
Tolerance mm : + 0.10

Rated speed rpm : 275

CRT mm min. : > 8.00

Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 14.65
Tolerance mm : + 0.05

Rated speed rpm : 650
rack travel mm : 12.80
Tolerance mm : + 0.20

Rated speed rpm : 1100
rack travel mm : 14.15
Tolerance mm : + 0.10

Rated speed rpm : 750
rack travel mm : 13.20
Tolerance mm : + 0.20

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1000
Pressure hPa : 1800
rack travel mm : 14.65
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1000
rack travel mm : 10.60
Tolerance mm : \pm 0.20

Rated speed rpm : 1000

Pressure hPa : 1220
rack travel mm : 14.00
Tolerance mm : \pm 0.20

Pressure hPa : 440
rack travel mm : 11.85
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 280

Check
speed 1/min : > 80
Check
speed 1/min : < 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1800
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 249.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 155.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 13.05
Rated speed rpm : 1160

Tolerance 1/min : \pm 15

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.80
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 168.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 24.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.07.96
Test oil : ISO 4113

Combination No. : 0 402 746 969

Injection pump
Pump designation : PES6P120A72ORS7321
EP type number : 0 412 726 906

Governor
Governor design. : RQV325...875PA944
: -17K
Governor no. : 0 421 815 391

Cust. part No. : 313GC5212-P2

Customer-spec. information
Customer : MACK
Motor : EM7-250
Power KW : 187.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 084

Inlet press. bar : 2.8
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.30
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 12.00
Tolerance mm : ± 1.00

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 875

Rack travel in mm : 12.45
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 269.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rack travel in mm : 4.70
Tolerance mm : ± 0.10

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 875
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 269.5
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 118.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.40
Rated speed rpm : 920
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1050
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 65.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 340
rack travel mm : 4.70
Tolerance mm : ± 0.10

Rated speed rpm : 275
CRT mm min. : > 6.00

Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 875
rack travel mm : 12.45
Tolerance mm : ± 0.05

Rated speed rpm : 510
rack travel mm : 13.20
Tolerance mm : ± 0.10

Rated speed rpm : 400
rack travel mm : 12.20
Tolerance mm : ± 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 510
Pressure hPa : 1200
rack travel mm : 13.20
Tolerance mm : ± 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 510
rack travel mm : 8.70
Tolerance mm : ± 0.20

Rated speed rpm : 510

Pressure hPa : 570
rack travel mm : 12.30
Tolerance mm : ± 0.20

Pressure hPa : 285
rack travel mm : 9.95
Tolerance mm : ± 0.05

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 250

Check
speed 1/min : > 80
Check
speed 1/min : < 255

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 510
Del. quantity
cm³/1000 strokes : 345.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 183.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 11.40
Rated speed rpm : 920
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.00
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 190.0
Tolerance
cm³/1000 strokes : \pm 20.0

Check tolerance
cm³/1000S. : \pm 30.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 23.07.96

Test oil : ISO 4113

Combination No. : 0 402 746 974

Injection pump

Pump designation : PES6P120A720RS7323

EP type number : 0 412 726 907

Governor

Governer design. : RQV325...900PA909

: -6K

Governer no. : 0 421 815 396

Cust. part No. : 313GC5213-P2

Customer spec. information

Customer : MACK

Motor : EN7350

Power KW : 261.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 2 417 413 084

Inlet press. bar : 2.8

Tolerance bar : ± 0.1

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0

Tolerance bar : ± 1.0

Prestroke mm : 2.80

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.00

Firing order : 1- 5- 3- 6- 2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.30

Check

tolerance °NW : ± 0.75

Start of delivery blocking

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 14.15

Tolerance mm : ± 0.05

Del. quantity

cm³/1000 strokes : 234.5

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spreed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rack travel in mm : 5.20
Tolerance mm : + 0.10

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 234.5
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 113.0
tolerance degree : + 6.0

RATED SPEED

rack travel mm : 13.15
Rated speed rpm : 945
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1120
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50

Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 62.0
tolerance degree : + 6.0

Testing:

Rated speed rpm : 325
rack travel mm : 5.20
Tolerance mm : + 0.10

Rated speed rpm : 275

CRT mm min. : > 6.30

Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 14.15
Tolerance mm : + 0.05

Rated speed rpm : 625
rack travel mm : 14.00
Tolerance mm : + 0.10

Rated speed rpm : 500
rack travel mm : 12.70
Tolerance mm : + 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 900
Pressure hPa : 1200
rack travel mm : 14.15
Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 900
rack travel mm : 8.40
Tolerance mm : + 0.20

Rated speed rpm : 900

Pressure hPa : 820

rack travel mm : 13.20
Tolerance mm : \pm 0.20

Pressure hPa : 380
rack travel mm : 9.85
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 275

Check
speed 1/min : > 80
Check
speed 1/min : < 285

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 625
Del. quantity
cm³/1000 strokes : 269.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 155.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 13.15
Rated speed rpm : 945
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.70

Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 200.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.07.96
Test oil : ISO 4113

Combination No. : 0 402 746 975

Injection pump
Pump designation : PES6P120A720RS7323
EP type number : 0 412 726 907

Governor
Governor design. : RQV325...900PA909
: -7K
Governor no. : 0 421 815 397

Cust. part No. : 313GC5213-P4

Customer-spec. information

Customer : MACK
Motor : EN7400
Power KW : 298.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 084

Inlet press. bar : 2.8
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.00

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 16.00
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 277.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325

Rack travel in mm : 5.20
Tolerance mm : +- 0.10

Del. quantity
cm³/1000 strokes : 44.0

Tolerance
cm³/1000 strokes : +- 3.0

Check tolerance
cm³/1000S. : +- 5.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
Aneroid pressure

hPa : 1500

Del. quantity
cm³/1000 strokes : 277.5

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 117.0
tolerance degree : +- 6.0

RATED SPEED

rack travel mm : 15.00
Rated speed rpm : 945
Tolerance 1/min : +- 5

rack travel mm : 4.00
Rated speed rpm : 1133
Tolerance 1/min : +- 15

rack travel mm : 0.50
Tolerance mm : +- 0.50
Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 64.0
tolerance degree : +- 6.0

Testing:

Rated speed rpm : 325
rack travel mm : 5.20
Tolerance mm : +- 0.10

Rated speed rpm : 275

CRT mm min. : > 6.70

Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 16.00
Tolerance mm : +- 0.05

Rated speed rpm : 625
rack travel mm : 15.60
Tolerance mm : +- 0.10

Rated speed rpm : 500
rack travel mm : 13.90
Tolerance mm : +- 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 900
Pressure hPa : 1500

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 900
rack travel mm : 8.50
Tolerance mm : +- 0.20

Rated speed rpm : 900

Pressure hPa : 980
rack travel mm : 14.40
Tolerance mm : \pm 0.20

Pressure hPa : 450
rack travel mm : 10.35
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 275

Check
speed 1/min : > 80
Check
speed 1/min : < 285

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 625
Del. quantity
cm³/1000 strokes : 307.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 159.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 15.00
Rated speed rpm : 945
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 11.20
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 215.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

LOW IDLE

Rated speed rpm : 325
Del. quantity
cm³/1000 strokes : 44.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.07.96
Test oil : ISO 4113
Combination No. : 0 402 746 977
Injection pump
Pump designation : PES6P120A720RS7323
EP type number : 0 412 726 907
Governor
Governor design. : RQV325...975PA909
: -9K
Governor no. : 0 421 815 399
Cust. part No. : 313GC5213-P10

Customer-spec. information
Customer : MACK
Motor : EN7300A
Power KW : 223.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 2 417 413 084

Inlet press. bar : 2.8
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.00

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 975

Rack travel in mm : 12.55
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 202.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000s. : ± 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rack travel in mm : 5.30
Tolerance mm : \pm 0.10

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 975
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 202.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 112.5
tolerance degree : \pm 6.0

RATED SPEED

rack travel mm : 11.60
Rated speed rpm : 1020
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1165
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 65.0
tolerance degree : \pm 6.0

Testing:

Rated speed rpm : 325
rack travel mm : 5.30
Tolerance mm : \pm 0.10

Rated speed rpm : 275
CRT mm min. : $>$ 6.30

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 975
rack travel mm : 12.55
Tolerance mm : \pm 0.05

Rated speed rpm : 600
rack travel mm : 12.00
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 11.50
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 975
Pressure hPa : 1200
rack travel mm : 12.55
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 975
rack travel mm : 8.20
Tolerance mm : \pm 0.20

Rated speed rpm : 975
Pressure hPa : 460
rack travel mm : 11.30
Tolerance mm : \pm 0.20

Pressure hPa : 235
rack travel mm : 9.30
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 275

Check
speed 1/min : > 80
Check
speed 1/min : < 285

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 223.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 148.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 11.60
Rated speed rpm : 1020
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.80
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 205.0
Tolerance
cm³/1000 strokes : \pm 20.0

Check tolerance
cm³/1000S. : \pm 30.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.07.96
Test oil : ISO 4113

Combination No. : 0 402 746 987

Injection pump
Pump designation : PES6P120A320LS7322
EP type number : 0 412 726 904

Governor
Governor design. : RQV350...1150PA1139K
Governor no. : 0 421 815 408

Cust. part No. : 1823137C91

Customer-spec. information
Customer : NAVISTAR
Motor : DTA-466
Power KW : 187.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 076

Inlet press. bar : 2.8
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

M09

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.90
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 11.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 13.05
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 181.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 325

Rack travel in mm : 6.15
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 26.5

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 5.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150
Aneroid pressure

hPa : 1200

Del. quantity
cm³/1000 strokes : 181.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 120.0

tolerance degree : ± 6.0

RATED SPEED

rack travel mm : 12.00

Rated speed rpm : 1220

Tolerance 1/min : ± 15

rack travel mm : 4.00
Rated speed rpm : 1360
Tolerance 1/min : ± 5

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1450

LOW IDLE

control lever
position degree : 73.0
tolerance degree : ± 6.0

Testing:

Rated speed rpm : 325
rack travel mm : 6.15
Tolerance mm : ± 0.10

Rated speed rpm : 275

CRT mm min. : > 7.00

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 1150
rack travel mm : 13.05
Tolerance mm : ± 0.05

Rated speed rpm : 750
rack travel mm : 12.00
Tolerance mm : ± 0.10

Rated speed rpm : 1000
rack travel mm : 13.00
Tolerance mm : ± 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1150
Pressure hPa : 1200
rack travel mm : 13.05
Tolerance mm : ± 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1150

rack travel mm : 9.00
Tolerance mm : \pm 0.20

Rated speed rpm : 1150

Pressure hPa : 815
rack travel mm : 12.00
Tolerance mm : \pm 0.20

Pressure hPa : 360
rack travel mm : 10.00
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 280

Check
speed 1/min : > 80
Check
speed 1/min : < 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 177.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : -
Rated speed rpm : 1150
Del. quantity
cm³/1000 strokes : 82.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 12.00
Rated speed rpm : 1220
Tolerance 1/min : \pm 15

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 21.00
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 130.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 30.0

LOW IDLE

Rated speed rpm : 325
Del. quantity
cm³/1000 strokes : 26.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 28.03.96
Test oil : ISO 4113

Combination No. : 0 402 748 808

Injection pump
Pump designation : PES8P120A920/4LS7316
EP type number : 0 412 728 808

Governor
Governor design. : RQV325...1250PA1116K
Governor no. : 0 421 815 379

Cust. part No. : 313 GC 5210

Customer-spec. information
Customer : MACK
Motor : EN9 700
Power KW : 522.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 2- 7- 8- 4
: - 5- 6- 3

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery blocking

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 12.55
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 250.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

Rated speed rpm : 350

Rack travel in mm : 5.60
Tolerance mm : ± 0.20

Del. quantity
cm³/1000 strokes : 51.5

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
guide sleeve
travel mm : 1.67
Tolerance mm : ± 0.25

Rated speed rpm : 1300
guide sleeve
travel mm : 9.96
Tolerance mm : ± 0.25

Rated speed rpm : 843
guide sleeve
travel mm : 6.02
Tolerance mm : ± 0.25

Rated speed rpm : 360
guide sleeve
travel mm : 2.30
Tolerance mm : ± 0.25

Rated speed rpm : 410
guide sleeve
travel mm : 3.05

Tolerance mm : ± 0.25

Rated speed rpm : 470
guide sleeve
travel mm : 3.55
Tolerance mm : ± 0.25

Rated speed rpm : 1580
guide sleeve
travel mm : 13.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1430

Rack travel in mm : 11.50
Tolerance mm : ± 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 250.5

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

CONTROL LEVER

control lever
position degree : 63.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.50
Rated speed rpm : 1300
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1405
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1500

LOW IDLE

control lever
position degree : 17.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 350
rack travel mm : 5.60
Tolerance mm : \pm 0.20

Rated speed rpm : 300

CRT mm min. : $>$ 7.00

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 12.55
Tolerance mm : \pm 0.05

Rated speed rpm : 900
rack travel mm : 12.30
Tolerance mm : \pm 0.10

Rated speed rpm : 750
rack travel mm : 11.30
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1250
Pressure hPa : 1200
rack travel mm : 12.55
Tolerance mm : \pm 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 1250
rack travel mm : 8.10
Tolerance mm : \pm 0.20

Rated speed rpm : 1250

Pressure hPa : 550
rack travel mm : 11.50
Tolerance mm : \pm 0.20

Pressure hPa : 275
rack travel mm : 9.35
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 290

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 300

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 900
Del. quantity
cm³/1000 strokes : 260.5
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000s. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000s. : 14.0

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 138.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000s. : \pm 4.0

BREAKAWAY

Rack travel in mm : 11.50
Rated speed rpm : 1300
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 11.40
Tolerance mm : \pm 0.50

Del. quantity
cm³/1000 strokes : 210.0
Tolerance
cm³/1000 strokes : +- 20.0
Check tolerance
cm³/1000S. : +- 24.0

LOW IDLE

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 51.5
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.07.96
Test oil : ISO 4113
Combination No. : 0 402 748 810
Injection pump
Pump designation : PES8P120A920/4LS7320
EP type number : 0 412 728 809
Governor
Governor design. : RQV325...950PA848
 : -32K
Governor no. : 0 421 815 389
Cust. part No. : 313GC5214P4

Customer-spec. information
Customer : MACK
Motor : E9-450
Power KW : 331.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 2 417 413 086
Inlet press. bar : 2.8
Tolerance bar : ± 0.1
Test nozzle holder
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 008

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0
Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 2- 7- 8- 4
 : - 5- 6- 3

Phasing : 0-45-90-135-180
 : -225-270-315
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery blocking

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 950
Rack travel in mm : 13.85
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 215.5

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 4.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rack travel in mm : 5.50
Tolerance mm : +- 0.20

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 1060

Rack travel in mm : 12.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 950
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 215.5
Tolerance
cm³/1000 strokes : +- 1.0
Check tolerance
cm³/1000S. : +- 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 118.0
tolerance degree : +- 6.0

RATED SPEED

rack travel mm : 12.80
Rated speed rpm : 995
Tolerance 1/min : +- 5

rack travel mm : 4.00
Rated speed rpm : 1135
Tolerance 1/min : +- 15

rack travel mm : 0.50
Tolerance mm : +- 0.50
Rated speed rpm : 1500

LOW IDLE

control lever
position degree : 73.0
tolerance degree : +- 6.0

Testing:

Rated speed rpm : 325
rack travel mm : 5.50
Tolerance mm : +- 0.20

Rated speed rpm : 275

CRT mm min. : > 7.00

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 950
rack travel mm : 13.85
Tolerance mm : +- 0.05

Rated speed rpm : 650
rack travel mm : 13.10
Tolerance mm : +- 0.10

Rated speed rpm : 750
rack travel mm : 13.70
Tolerance mm : +- 0.20

Rated speed rpm : 500
rack travel mm : 12.00
Tolerance mm : +- 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 950
Pressure hPa : 1200
rack travel mm : 13.85
Tolerance mm : +- 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 950
rack travel mm : 8.90
Tolerance mm : \pm 0.20

Rated speed rpm : 950

Pressure hPa : 535
rack travel mm : 12.85
Tolerance mm : \pm 0.20

Pressure hPa : 230
rack travel mm : 10.35
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 260

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 270

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 222.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Spreed
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000S. : 14.0

Aneroid pressure
hPa : -
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 146.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 12.80
Rated speed rpm : 995
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 11.20
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 185.0
Tolerance
cm³/1000 strokes : \pm 20.0
Check tolerance
cm³/1000S. : \pm 25.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.07.96
Test oil : ISO 4113
Combination No. : 0 402 798 800
Injection pump
Pump designation : PES8P120A920/4LS7293
EP type number : 0 412 728 807
Governor
Governor design. : RE30
Governor no. : 0 421 890 016

Cust. part No. : 313 GC 5208

Customer-spec. information
Customer : MACK
Motor : EE9-550
Power KW : 410.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 086

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

M19

x inside diameter : 2.0
x length mm : 600

REMARKS

Pump-specific values
in Section (B)
must be observed!

(A) INJECTION PUMP SETTINGS
No basic setting.
Setting of constant delivery
under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.30
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 0.20

Firing order : 1- 2- 7- 8- 4
 : - 5- 6- 3

Phasing : 0-45-90-135-180
 : -225-270-315

Start of delivery blocking

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

(B) POSITIONER TESTING

Warm-up time: 3 minutes at
n=600 min⁻¹, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min-1: 0

Setting point
(P, R and H pump)

Uact V : 3.100
CRT mm : 13.00
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(P, R and H pump)

Uact V : 1.700
CRT mm : 6.15
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Setting point
(M pump)

Uact V : 3.100
CRT mm : 12.50
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(M pump)

Uact V : 1.700
CRT mm : 5.50
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Stop position

Uact V : Value with
deenergised adjusting magnet
and control rod in
stop position.

CRT mm : 0.75
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR
(All P and R pumps not
H and M pumps)

Test with control rod
in stop position

Engine speed min-1: 60
Amplitude V : 1.4
Tolerance V : +/- 0.6
Check
tolerance V : +/- 1.20

Engine speed min-1: 600
Difference
Amplitude to
Amplitude V : max.1.4

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 950
Uact V : 3.000
Del. quantity
cm3/1000 strokes : 300.5
Tolerance
cm3/1000 strokes : +/- 1.0
Check tolerance
cm3/1000S. : +/- 4.0
Spreed
Tolerance
cm3/1000 strokes : 7.0
Check tolerance
cm3/1000S. : 11.0

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 700
Uact V : 2.990
Del. quantity
cm3/1000 strokes : 339.5
Tolerance
cm3/1000 strokes : +/- 5.0
Check tolerance
cm3/1000S. : +/- 8.0
Spreed
Tolerance
cm3/1000 strokes : 12.0
Check tolerance
cm3/1000S. : 16.0

TEST POINT L1

Rated speed rpm : 325
Uact V : 1.300
Tolerance Volt : +/- 0.060
Check tolerance
Volt : +/- 0.070
Del. quantity
cm3/1000 strokes : 27.0
Tolerance
cm3/1000 strokes : +/- 3.0
Spreed

Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Uact V : 4.700
Del. quantity
cm³/1000 strokes : 180.0
Tolerance
cm³/1000 strokes : ± 15.0
Check tolerance
cm³/1000s. : ± 20.0
Spreed
Tolerance
cm³/1000 strokes : 40.0
Check tolerance
cm³/1000s. : 45.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.07.96
Test oil : ISO 4113
Combination No. : 0 402 798 801
Injection pump
Pump designation : PES8P120A920/4LS7336
EP type number : 0 412 728 810
Governor
Governor design. : RE30
Governor no. : 0 421 890 016

Cust. part No. : 313 GC 5209

Customer-spec. information
Customer : MACK
Motor : E9-550
Power KW : 410.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 086

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

Pump-specific values
in Section (B)
must be observed!

(A) INJECTION PUMP SETTINGS
No basic setting.
Setting of constant delivery
under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.30
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 0.20

Firing order : 1- 2- 7- 8- 4
 : - 5- 6- 3

Phasing : 0-45-90-135-180
 : -225-270-315

Start of delivery blocking

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

(B) POSITIONER TESTING

Warm-up time: 3 minutes at
n=600 min⁻¹, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min-1: 0

Setting point
(P, R and H pump)

Uact V : 3.100
CRT mm : 13.00
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(P, R and H pump)

Uact V : 1.700
CRT mm : 6.15
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Setting point
(M pump)

Uact V : 3.100
CRT mm : 12.50
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(M pump)

Uact V : 1.700
CRT mm : 5.50
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Stop position

Uact V : Value with
deenergised adjusting magnet
and control rod in
stop position.

CRT mm : 0.75
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR
(All P and R pumps not
H and M pumps)

Test with control rod
in stop position

Engine speed min-1: 60
Amplitude V : 1.4
Tolerance V : +/- 0.6
Check
tolerance V : +/- 1.20

Engine speed min-1: 600
Difference
Amplitude to
Amplitude V : max.1.4

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 900
Uact V : 2.950
Del. quantity
cm3/1000 strokes : 303.0
Tolerance
cm3/1000 strokes : +/- 1.0
Check tolerance
cm3/1000S. : +/- 4.0
Spreed
Tolerance
cm3/1000 strokes : 7.0
Check tolerance
cm3/1000S. : 11.0

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 625
Uact V : 2.880
Del. quantity
cm3/1000 strokes : 339.5
Tolerance
cm3/1000 strokes : +/- 5.0
Check tolerance
cm3/1000S. : +/- 8.0
Spreed
Tolerance
cm3/1000 strokes : 12.0
Check tolerance
cm3/1000S. : 16.0

TEST POINT L1

Rated speed rpm : 325
Uact V : 1.300
Tolerance Volt : +/- 0.060
Check tolerance
Volt : +/- 0.070
Del. quantity
cm3/1000 strokes : 27.0
Tolerance
cm3/1000 strokes : +/- 3.0
Spreed

Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Uact V : 4.700
Del. quantity
cm³/1000 strokes : 180.0
Tolerance
cm³/1000 strokes : ± 15.0
Check tolerance
cm³/1000s. : ± 20.0
Spreed
Tolerance
cm³/1000 strokes : 40.0
Check tolerance
cm³/1000s. : 45.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.07.96
Test oil : ISO 4113
Combination No. : 0 402 996 304
Injection pump
Pump designation : PES6P120A720RS8510
EP type number : 0 412 926 206

Governor
Governor design. : RE30
Governor no. : 0 421 890 023

Cust. part No. : 313 GC 5205 P3

Customer-spec. information
Customer : MACK
Motor : E7 450
Power KW : 331.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 084

Inlet press. bar : 3.0
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

Pump-specific values
in Section (B)
must be observed!

(A) INJECTION PUMP SETTINGS
No basic setting.
Setting of constant delivery
under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 12.00
Tolerance mm : ± 0.20

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

(B) POSITIONER TESTING
Warm-up time: 3 minutes at
n=600 min⁻¹, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min⁻¹ : 0

Setting point
(P, R and H pump)

Uact V : 3.100

CRT mm : 13.00
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(P, R and H pump)

Uact V : 1.700
CRT mm : 6.15
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Setting point
(M pump)

Uact V : 3.100
CRT mm : 12.50
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(M pump)

Uact V : 1.700
CRT mm : 5.50
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Stop position

Uact V : Value with
deenergised adjusting magnet
and control rod in
stop position.
CRT mm : 0.75
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR
(All P and R pumps not
H and M pumps)

Test with control rod
in stop position

Engine speed min-1: 60
Amplitude V : 1.4
Tolerance V : +/- 0.6
Check
tolerance V : +/- 1.20

Engine speed min-1: 600

Difference
Amplitude to
Amplitude V : max.1.4

(C) INJECTION PUMP WITH POSITIONER

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 625
Uact V : 3.210
Del. quantity
cm³/1000 strokes : 408.0
Tolerance
cm³/1000 strokes : +/- 10.0
Check tolerance
cm³/1000S. : +/- 12.0
Spreed
Tolerance
cm³/1000 strokes : 16.0
Check tolerance
cm³/1000S. : 18.0

TEST POINT L1

Rated speed rpm : 325
Uact V : 1.300
Tolerance Volt : +/- 0.060
Check tolerance
Volt : +/- 0.070
Del. quantity
cm³/1000 strokes : 30.0
Tolerance
cm³/1000 strokes : +/- 3.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 14.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Uact V : 4.700
Del. quantity
cm³/1000 strokes : 188.0
Tolerance
cm³/1000 strokes : +/- 19.0
Check tolerance
cm³/1000S. : +/- 22.0
Spreed
Tolerance
cm³/1000 strokes : 40.0

Check tolerance
cm³/1000s. : 50.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.07.96
Test oil : ISO 4113

Combination No. : 0 402 996 305

Injection pump
Pump designation : PES6P120A720RS8512
EP type number : 0 412 926 207

Governor
Governor design. : RE30
Governor no. : 0 421 890 024

Cust. part No. : 313 GC 5217 P1

Customer-spec. information
Customer : MACK
Motor : E7

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 413 359 008

Inlet press. bar : 3.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

∅ inside diameter : 2.0
x length mm : 600

REMARKS

Pump-specific values
in Section (B)
must be observed!

(A) INJECTION PUMP SETTINGS
No basic setting.
Setting of constant delivery
under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 4.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 12.00
Tolerance mm : ± 0.20

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

(B) POSITIONER TESTING
Warm-up time: 3 minutes at
n=600 min⁻¹, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min⁻¹: 0

Setting point
(P, R and H pump)

Uact V : 3.100

CRT mm : 13.00
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(P, R and H pump)

Uact V : 1.700
CRT mm : 6.15
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Setting point
(M pump)

Uact V : 3.100
CRT mm : 12.50
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(M pump)

Uact V : 1.700
CRT mm : 5.50
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Stop position

Uact V : Value with
deenergised adjusting magnet
and control rod in
stop position.

CRT mm : 0.75
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR
(All P and R pumps not
H and M pumps)

Test with control rod
in stop position

Engine speed min-1: 60
Amplitude V : 1.4
Tolerance V : +/- 0.6
Check
tolerance V : +/- 1.20

Engine speed min-1: 600

Difference
Amplitude to
Amplitude V : max.1.4

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 900
Uact V : 3.050
Del. quantity
cm3/1000 strokes : 310.0
Tolerance
cm3/1000 strokes : +/- 1.0
Check tolerance
cm3/1000S. : +/- 5.0
Spreed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000S. : 14.0

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 625
Uact V : 3.260
Del. quantity
cm3/1000 strokes : 392.0
Tolerance
cm3/1000 strokes : +/- 10.0
Check tolerance
cm3/1000S. : +/- 12.0
Spreed
Tolerance
cm3/1000 strokes : 16.0
Check tolerance
cm3/1000S. : 18.0

TEST POINT L1

Rated speed rpm : 325
Uact V : 1.310
Tolerance Volt : +/- 0.060
Check tolerance
Volt : +/- 0.070
Del. quantity
cm3/1000 strokes : 33.0
Tolerance
cm3/1000 strokes : +/- 3.0
Spreed
Tolerance
cm3/1000 strokes : 6.0
Check tolerance
cm3/1000S. : 14.0

STARTING FUEL DELIVERY

Rated speed rpm	:	100
Uact V	:	4.700
Del. quantity		
cm ³ /1000 strokes	:	195.0
Tolerance		
cm ³ /1000 strokes	:	± 19.0
Check tolerance		
cm ³ /1000S.	:	± 22.0
Spreed		
Tolerance		
cm ³ /1000 strokes	:	40.0
Check tolerance		
cm ³ /1000S.	:	50.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.07.96
Test oil : ISO 4113

Combination No. : 0 403 466 165

Injection pump
Pump designation : PES6MW100/120RS1241
EP type number : 0 413 406 240

Governor
Governor design. : RSV450...1250MWOA383
Governor no. : 0 420 085 266

Cust. part No. : 3929164

Customer-spec. information
Customer : CDC
Motor : 6 CT
Power KW : 133.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

N03

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

*NW after s.o.d. : 8.25
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

Beginning of delivery differende

and maximum rack
travel : 15.00
Difference ° CS : 1.50

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 11.05
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 123.5

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rated speed rpm : 450

Rack travel in mm : 5.90
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 27.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.5

Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 4.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250

Aneroid pressure
hPa : 900

Del. quantity
cm³/1000 strokes : 123.5

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 96.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 9.90
Rated speed rpm : 1325
Tolerance 1/min : \pm 5

rack travel mm : 6.70
Rated speed rpm : 1390
Tolerance 1/min : \pm 5

rack travel mm : 1.00
Tolerance mm : \pm 0.70
Rated speed rpm : 1510

LOW IDLE

control lever
position degree : 76.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 450
rack travel mm : 5.40

Testing:

Rated speed rpm : 450
rack travel mm : 5.90
Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 11.05
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.20
Tolerance mm : \pm 0.20

Rated speed rpm : 500

Pressure hPa : 600
rack travel mm : 10.60
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 114.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 9.90
Rated speed rpm : 1325
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50

NOS

Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 171.5
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 13.0

LOW IDLE

Rated speed rpm : 450
Del. quantity
cm³/1000 strokes : 27.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 23.07.96

Test oil : ISO 4113

Combination No. : 0 403 466 169

Injection pump

Pump designation : PES6MW100/120RS1242

EP type number : 0 413 406 241

Governor

Governer design. : RSV500...1100MW5A385

Governer no. : 0 420 085 270

Cust. part No. : 3926885

Customer-spec. information

Customer : CDC

Motor : 6 CTA

Power KW : 179.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0

Tolerance bar : ± 0.1

Test nozzle holde
assembly

: 1 688 901 101

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0

Tolerance bar : ± 1.0

Prestroke mm : 3.20

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 10.50

Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Start of delivery blocking

*NW after s.o.d. : 8.50

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Barrel no. : 1

Beginning of delivery difference

and maximum rack

travel : 15.00

Difference ° CS : 1.50

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 13.05
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 162.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rated speed rpm : 500

Rack travel in mm : 5.20
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 21.0

Tolerance
cm³/1000 strokes : + 2.0

Check tolerance
cm³/1000S. : + 4.5

Spread
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

governor spring
pre-tension
click setting x : 3.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 162.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Spread
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

RATED SPEED

rack travel mm : 12.00
Rated speed rpm : 1170

Tolerance 1/min : + 5

rack travel mm : 1.00
Tolerance mm : + 0.70

Rated speed rpm : 1300

LOW IDLE

Setting point w/out bumper spring

Rated speed rpm : 500
rack travel mm : 4.70

Testing:

Rated speed rpm : 500
rack travel mm : 5.20
Tolerance mm : + 0.10

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 13.05
Tolerance mm : + 0.05

Rated speed rpm : 750
rack travel mm : 13.60
Tolerance mm : + 0.10

Rated speed rpm : 1000
rack travel mm : 13.60
Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.70
Tolerance mm : \pm 0.20

Rated speed rpm : 500

Pressure hPa : 900
rack travel mm : 13.20
Tolerance mm : \pm 0.20

Pressure hPa : 560
rack travel mm : 11.60
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 177.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 119.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 12.00
Rated speed rpm : 1170
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 140.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 13.0

LOW IDLE

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 21.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.07.96
Test oil : ISO 4113

Combination No. : 0 403 466 170

Injection pump
Pump designation : PES6MW100/120RS1242
EP type number : 0 413 406 241

Governor
Governor design. : RSV550...1100MW5A386
Governor no. : 0 420 085 271

Cust. part No. : 3929170

Customer-spec. information
Customer : CDC
Motor : 6 CTA
Power KW : 179.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

N09

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.20
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

°NW after s.o.d. : 8.50
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

Beginning of delivery differende

and maximum rack
travel : 15.00
Difference ° CS : 1.50

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 13.05
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 162.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rated speed rpm : 550

Rack travel in mm : 5.25
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 23.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.5

Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 162.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

RATED SPEED

rack travel mm : 12.00
Rated speed rpm : 1170

Tolerance 1/min : \pm 5

rack travel mm : 1.00
Tolerance mm : \pm 0.70

Rated speed rpm : 1300

LOW IDLE

Setting point w/out bumper spring

Rated speed rpm : 550
rack travel mm : 4.75

Testing:

Rated speed rpm : 550
rack travel mm : 5.25
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 13.05
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 13.60
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
rack travel mm : 13.60
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.70
Tolerance mm : ± 0.20

Rated speed rpm : 500

Pressure hPa : 900
rack travel mm : 13.20
Tolerance mm : ± 0.20

Pressure hPa : 560
rack travel mm : 11.60
Tolerance mm : ± 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 177.5
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 5.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 119.5
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

BREAKAWAY

Rack travel in mm : 12.00
Rated speed rpm : 1170
Tolerance 1/min : ± 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : ± 1.00
Del. quantity
cm³/1000 strokes : 140.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 13.0

LOW IDLE

Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.07.96
Test oil : ISO 4113

Combination No. : 0 403 466 171

Injection pump
Pump designation : PES6MW100/120RS1242
EP type number : 0 413 406 241

Governor
Governor design. : RSV550...1100MW5A387
Governor no. : 0 420 085 272

Cust. part No. : 3930453

Customer-spec. information

Customer : CDC
Motor : 6 CTA
Power KW : 179.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

N12

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.20
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

*NW after s.o.d. : 8.50
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

Beginning of delivery difference

and maximum rack
travel : 15.00
Difference ° CS : 1.50

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 13.05
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 162.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rated speed rpm : 550

Rack travel in mm : 5.25
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 23.0

Tolerance
cm³/1000 strokes : \pm 2.0

Check tolerance
cm³/1000S. : \pm 4.5

Speed
Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100

Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 162.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0
Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 104.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 12.00
Rated speed rpm : 1195
Tolerance 1/min : \pm 5

rack travel mm : 8.00
Rated speed rpm : 1235
Tolerance 1/min : \pm 5

rack travel mm : 1.00
Tolerance mm : \pm 0.70
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 79.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 550
rack travel mm : 4.75

Testing:

Rated speed rpm : 550
rack travel mm : 5.25
Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 13.05
Tolerance mm : \pm 0.05

Rated speed rpm : 750
rack travel mm : 13.60
Tolerance mm : \pm 0.10

Rated speed rpm : 1000
rack travel mm : 13.60
Tolerance mm : \pm 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.70
Tolerance mm : \pm 0.20

Rated speed rpm : 500

Pressure hPa : 900
rack travel mm : 13.20
Tolerance mm : \pm 0.20

Pressure hPa : 560
rack travel mm : 11.60
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 177.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0
Speed
Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 119.5
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 12.00
Rated speed rpm : 1195
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 140.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 13.0

LOW IDLE

Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.07.96
Test oil : ISO 4113

Combination No. : 0 403 466 177

Injection pump
Pump designation : PES6MW100/120RS1242
EP type number : 0 413 406 241

Governor
Governor design. : RSV550...1100MW5A397
Governor no. : 0 420 085 286

Cust. part No. : 3931283

Customer-spec. information
Customer : CDC
Motor : 6 CTA
Power KW : 180.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 3.20
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

*NW after s.o.d. : 8.50
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

Beginning of delivery differende

and maximum rack
travel : 15.00
Difference ° CS : 1.50

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 13.05
Tolerance mm : \pm 0.05

Del. quantity
cm³/1000 strokes : 162.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

Rated speed rpm : 550

Rack travel in mm : 5.15
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5

Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : \pm 0.20

governor spring
pre-tension
click setting x : 3.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100

Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 162.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Speed
Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 7.5

CONTROL LEVER

control lever
position degree : 100.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 12.00
Rated speed rpm : 1180
Tolerance 1/min : \pm 5

rack travel mm : 6.00
Rated speed rpm : 1235
Tolerance 1/min : \pm 5

rack travel mm : 1.00
Tolerance mm : \pm 0.70
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 77.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 550
rack travel mm : 4.65

Testing:

Rated speed rpm : 550
rack travel mm : 5.15
Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 13.05
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 10.80
Tolerance mm : \pm 0.20

Rated speed rpm : 500

Pressure hPa : 900
rack travel mm : 13.00
Tolerance mm : \pm 0.20

Pressure hPa : 560
rack travel mm : 11.50
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 119.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0

BREAKAWAY

Rack travel in mm : 12.00
Rated speed rpm : 1180
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 1.00
Del. quantity
cm³/1000 strokes : 140.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 13.0

LOW IDLE

Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 24.07.96
Test oil : ISO 4113
Combination No. : 0 401 840 754
Injection pump
Pump designation : PE12P110A92QLS3173
EP type number : 0 411 810 708

Governor
Governor design. : RQV300...1150PA820
Governor no. : 0 421 813 561

Cust. part No. : 02421978KY0143-17

Customer-spec. information

Customer : KHD
Motor : BF12L513C
Power KW : 386.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1; 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 4- 9- 8- 5- 2
: - 11- 10- 3- 6
: - 7- 12

Phasing : 0-15-60-75-120-135
: -180-195-240-255
: -300-315
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.50

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 12.50
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 157.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 300

Rack travel in mm : 7.00
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 17.0

Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 5.5

Spread
Tolerance
cm³/1000 strokes : 7.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 1190

Rack travel in mm : 16.50
Tolerance mm : \pm 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150

Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 157.0

Tolerance
cm³/1000 strokes : \pm 1.0

Check tolerance
cm³/1000S. : \pm 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 55.0
tolerance degree : \pm 4.0

control lever
position degree : 121.0
tolerance degree : \pm 4.0

RATED SPEED

rack travel mm : 11.50
Rated speed rpm : 1195
Tolerance 1/min : \pm 5

rack travel mm : 4.00
Rated speed rpm : 1305
Tolerance 1/min : \pm 15

rack travel mm : 0.50
Tolerance mm : \pm 0.50
Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 85.0
tolerance degree : \pm 4.0

control lever
position degree : 19.0
tolerance degree : \pm 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 7.00
Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : > 8.60

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1150
rack travel mm : 12.50
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 450
Pressure hPa : 750
rack travel mm : 12.50
Tolerance mm : \pm 0.10

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 450
rack travel mm : 10.70
Tolerance mm : \pm 0.10

Rated speed rpm : 450

Pressure hPa : 365
rack travel mm : 11.15
Tolerance mm : \pm 0.10

Pressure hPa : 430
rack travel mm : 12.05
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : > 100
Rated speed rpm : < 220

Check
speed 1/min : > 80
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 450
Del. quantity
cm³/1000 strokes : 110.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

BREAKAWAY

Rack travel in mm : 11.50
Rated speed rpm : 1195

N20

Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 17.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 5.5
Speed
Tolerance
cm³/1000 strokes : 7.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 24.07.96

Test oil : ISO 4113

Combination No. : 0 401 848 820

Injection pump

Pump designation : PE8P120A720LS3281-1

EP type number : 0 411 828 727

Governor

Governor design. : RQV300...1050PA1009

Governor no. : 0 421 813 938

Cust. part No. : B0148-8-301

Customer-spec. information

Customer : KHD

Motor : BF8L513LC

Power KW : 243.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C : 40

Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Tolerance bar : ± 0.1

Test nozzle holder assembly

: 1 688 901 019

Opening pressure

bar : 208.5

Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

N21

x inside diameter : 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ± 1.0

Prestroke mm : 3.75

Tolerance mm : ± 0.05

Check

tolerance mm : ± 0.10

Rack travel in mm : 13.50

Tolerance mm : ± 0.50

Firing order : 1- 8- 7- 2- 6

: - 5- 4- 3

Phasing : 0-45-90-135-180

: -225-270-315

Tolerance : ± 0.30

Check

tolerance °NW : ± 0.50

Start of delivery mark

Tolerance : ± 0.50

Check

tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 13.50

Tolerance mm : ± 0.05

Del. quantity

cm³/1000 strokes : 187.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 6.50

Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 33.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
guide sleeve
travel mm : 2.52
Tolerance mm : ± 0.20

Rated speed rpm : 1108
guide sleeve
travel mm : 8.59
Tolerance mm : ± 0.15

Rated speed rpm : 728
guide sleeve
travel mm : 5.37
Tolerance mm : ± 0.25

Rated speed rpm : 370
guide sleeve
travel mm : 3.00
Tolerance mm : ± 0.25

Rated speed rpm : 1350
guide sleeve
travel mm : 11.50

Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1160

Rack travel in mm : 12.50

Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050

Aneroid pressure
hPa : 850

Del. quantity
cm³/1000 strokes : 187.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 123.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 12.50
Rated speed rpm : 1095
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1210
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 95.0
tolerance degree : ± 4.0

Testing:

Rated speed rpm : 300
rack travel mm : 6.50
Tolerance mm : \pm 0.10

Rated speed rpm : 100

CRT mm min. : $>$ 7.90

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 13.50
Tolerance mm : \pm 0.05

Rated speed rpm : 650
rack travel mm : 13.80
Tolerance mm : \pm 0.10

Rated speed rpm : 775
rack travel mm : 13.70
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 850
rack travel mm : 13.80
Tolerance mm : \pm 0.05

MEASUREMENT

Pressure hPa : -
Rated speed rpm : 500
rack travel mm : 12.00
Tolerance mm : \pm 0.10

Rated speed rpm : 500

Pressure hPa : 275
rack travel mm : 12.50
Tolerance mm : \pm 0.20

Pressure hPa : 595
rack travel mm : 13.40
Tolerance mm : \pm 0.05

START CUT-OUT

Rated speed rpm : $>$ 100
Rated speed rpm : $<$ 220

Check
speed 1/min : $>$ 80
Check
speed 1/min : $<$ 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 850
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 188.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 5.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 125.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 12.50
Rated speed rpm : 1095
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 185.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 33.0
Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.07.96
Test oil : ISO 4113

Combination No. : 0 401 876 814

Injection pump
Pump designation : PE6P110A320RS3364
EP type number : 0 411 816 798

Governor
Governor design. : RSV300...900P1A625
Governor no. : 0 421 833 554

Cust. part No. : 11030180
: -P02 v.01/96

Customer-spec. information
Customer : VME
Motor : TD 63 KFE
Power KW : 120.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration
damper
(RoBo diaphragm) : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 046

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

N25

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 12.20
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 151.0

Tolerance
cm3/1000 strokes : + 1.0

Check tolerance
cm3/1000S. : + 3.0

Spreed
Tolerance
cm3/1000 strokes : 4.0

Check tolerance
cm3/1000S. : 7.5

Rated speed rpm : 300

Rack travel in mm : 4.80

Tolerance mm : + 0.10

Del. quantity

cm3/1000 strokes : 26.0

Tolerance

cm3/1000 strokes : + 2.0

Check tolerance

cm3/1000S. : + 4.5

Spreed

Tolerance

cm3/1000 strokes : 3.0

Check tolerance

cm3/1000S. : 6.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

governor spring
pre-tension
click setting x : 5.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900

Aneroid pressure
hPa : 1500

Del. quantity

cm3/1000 strokes : 151.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000S. : + 3.0

Spreed

Tolerance

cm3/1000 strokes : 4.0

Check tolerance

cm3/1000S. : 7.5

RATED SPEED

rack travel mm : 11.20

Rated speed rpm : 930

Tolerance 1/min : + 5

rack travel mm : 0.85

Tolerance mm : + 0.55

Rated speed rpm : 1150

LOW IDLE

Setting point w/out bumper spring

Rated speed rpm : 300

rack travel mm : 4.30

Testing:

Rated speed rpm : 300

rack travel mm : 4.80

Tolerance mm : + 0.10

TORQUE CONTROL

Rated speed rpm : 900

rack travel mm : 12.20

Tolerance mm : + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 550

Pressure hPa : 1500

rack travel mm : 12.20

Tolerance mm : + 0.05

MEASUREMENT

Pressure hPa : -

Rated speed rpm : 550

rack travel mm : 9.00

Tolerance mm : + 0.10

Rated speed rpm : 550

Pressure hPa : 650

rack travel mm : 2.90

Tolerance mm : + 0.20

Pressure hPa : 90

rack travel mm : 0.25
Tolerance mm : \pm 0.05

End of test specification sheet

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 87.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

BREAKAWAY

Rack travel in mm : 11.20
Rated speed rpm : 930
Tolerance 1/min : \pm 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 103.0
Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 14.0

LOW IDLE

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 26.0
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 6.0